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SEVENTEENTH ANNUAL REPORT

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OF THE

JAN 24 1919

ILLINOIS

State Bee-Keepers' Association

Organized February 26, 1891, at
Springfield, Illinois

Compiled by
JAMES A. STONE, Secretary,
R. R. 4, Springfield, Ill.

[Printed by authority of the State of Illinois.]

SPRINGFIELD, ILL.
ILLINOIS STATE JOURNAL CO., STATE PRINTERS.
1918
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Letter of Transmittal.

OFFICE OF THE SECRETARY,
R. R. 4, SPRINGFIELD, ILLINOIS, *March 1, 1918.*

To His Excellency Frank O. Lowden, Governor of the State of Illinois.

SIR: I have the honor to transmit herewith the Seventeenth Annual Report of the Illinois State Bee-Keepers' Association.

Respectfully submitted,
JAMES A. STONE, *Secretary.*

414450

FATHER LANGSTROTH,

Inventor of the Movable Frame Hive.

OFFICERS

OF THE

Illinois State Bee-Keepers' Association

FOR 1918.

DR. A. C. BAXTER - - - - - - - - - President
Springfield.

A. L. KILDOW - - - - - - - - - - - Putnam
State Inspector of Apiaries.

VICE PRESIDENTS.

1ST HARRY L. KING - - - - - - - - Springfield
2D A. O. HEINZEL - - - - - - - - R. 3, Lincoln
3D G. M. WITHROW - - - - - - - Mechanicsburg
4TH W. H. WILLIAMS - - - - - - - - - Pekin
5TH AARON COPPIN - - - - - - - - - Wenona
JAMES A. STONE - - - - - - - - - Secretary
CHAS. BECKER - - - - - - - - - - Treasurer
Pleasant Plains.

List of members will appear in back of Report. Also Statistical Report and Index.

Formation of the Illinois State Bee-Keepers' Association.

Springfield, Ill., *February 26, 1891.*

The Capitol Bee-Keepers' Association was called to order by President P. J. England.

Previous notice having been given that an effort would be made to form a State Association, and there being present bee-keepers from different parts of the State, by motion, a recess was taken in order to form such an Association.

P. J. England was chosen temporary chairman and C. E. Yocum temporary secretary. On motion, the Chair appointed Thos. G. Newman, C. P. Dadant and Hon. J. M. Hambaugh a Committee on Constitution.

Col. Chas. F. Mills addressed the meeting on the needs of a State Association and stated that it was his opinion that the bee-keepers should have a liberal appropriation for a State Apiarian Exhibit at the World's Columbian Exposition.

A motion to adjourn till 1:30 p. m, prevailed.

AFTERNOON SESSION.

The Committee on Constitution reported a form for same which, on motion, was read by the Secretary, by sections serially.

Geo. F. Robbins moved to substitute the word "shall" for "may" in the last clause of Section 1, Article III. This led to a very animated discussion, and the motion was lost.

J. A. Stone moved to amend the above-named section by striking out the word "ladies" and all that followed of the same section, which motion led to further discussion, and motion finally prevailed.

Section 2, Article II, relating to a quroum, was, on motion, entirely stricken out.

Mr. Robbins moved to amend Article V. by adding the words "Thirty days' notice having been given to each member." Prevailed.

Thos. G. Newman moved to adopt the Constitution, so amended, as a whole. Which motion prevailed.

See Constitution.

J. A. Stone moved that the Chair appoint a Nominating Committee of three on permanent organization. Prevailed.

Chair appointed as such committee, Col. Chas. F. Mills, Hon. J. M. Hambaugh, and C. P. Dadant.

Committee retired and in a few minutes returned, submitting the following named persons as candidates for their respective offices:

For President—P. J. England, Fancy Prairie.

For Vice Presidents—Mrs. L. Harrison, Peoria; C. P. Dadant, Hamilton; W. T. F. Petty, Pittsfield; Hon. J. M. Hambaugh, Spring; Dr. C. C. Miller, Marengo.

Secretary—Jas. A. Stone, Bradfordton.

Treasurer—A. N. Draper, Upper Alton.

Mr. Black moved the adoption of the report of the Committee on Nominations. The motion prevailed, and the officers as named by the committee were declared elected for the ensuing year.

Hon. J. M. Hambaugh moved that Mr. Thos. G. Newman, editor American Bee Journal, of Chicago, be made the first honorary member of the Association. Prevailed.

At this point Col. Chas. F. Mills said: "Mr. Chairman, I want to be the first one to pay my dollar for membership," at the same time suiting his action to his words, and others followed his example, as follows:

CHARTER MEMBERS.

Col. Chas. F. Mills, Springfield.
Hon. J. M. Hambaugh, Spring.
Hon. J. S. Lyman, Farmingdale.
C. P. Dadant, Hamilton.
Chas. Dadant, Hamilton.
A. N. Draper, Upper Alton.
S. N. Black, Clayton.
Aaron Coppin, Wenona.
Geo. F. Robbins, Mechanicsburg.
J. W. Yocum, Williamsville.
Thos. S. Wallace, Clayton.
A. J. England, Fancy Prairie.
P. J. England, Fancy Prairie.
C. E. Yocom, Sherman.
Jas. A. Stone, Bradfordton.

FIRST HONORARY MEMBER.

Thos. G. Newman, editor American Bee Journal, Chicago.

State of Illinois---Department of State.

ISAAC N. PEARSON, *Secretary of State.*

To all to whom these Presents shall come—GREETING:

Whereas, A certificate duly signed and acknowledged having been filed in the office of the Secretary of State on the 27th day of February, A. D. 1891, for the organization of the Illinois State Bee-Keepers' Association, under and in accordance with the provisions of "An Act Concerning Corporations," approved April 18, 1872, and in force July 1, 1872, and all acts amendatory thereof, a copy of which certificate is hereunto attached.

Now, Therefore, I, Isaac N. Pearson Secretary of State, of the State of Illinois, by virtue of the powers and duties vested in me by law, do hereby certify that the said, The Illinois State Bee-Keepers' Association, is a legally organized corporation under the laws of the State.

In Testimony Whereof, I hereunto set my hand and cause to be affixed the great seal of State.

Done at the city of Springfield, this 27th day of February, in the year of our Lord one thousand eight hundred [Seal] and ninety one, and the Independence of the United States the one hundred and fifteenth.

I. N. PEARSON,
Secretary of State.

STATE OF ILLINOIS, } ss.
County of Sangamon, }

To Isaac N. Pearson, Secretary of State:

We, the undersigned, Perry J. England, Jas. A. Stone and Albert N. Draper, citizens of the United States, propose to form a corporation under an act of the General Assembly of the State of Illinois, entitled "An Act Concerning Corporations," approved April 18, 1872, and all acts amendatory thereof; and for the purposes of such organizations, we hereby state as follows, to-wit:

1. The name of such corporation is, The Illinois State Bee-Keepers' Association.

2. The object for which it is formed is, to promote the general interests of the pursuit of bee-culture.

3. The management of the aforesaid Association shall be vested in a board of three Directors, who are to be elected annually.

4. The following persons are hereby selected as the Directors, to control and manage said corporation for the first year of its corporate existence, viz: Perry J. England, Jas. A. Stone, and Albert N. Draper.

5. The location is in Springfield, in the county of Sangamon, State of Illinois. (Signed.)

PERRY J. ENGLAND.
JAS. A. STONE.
ALBERT N. DRAPER.

STATE OF ILLINOIS, } ss.
Sangamon County. }

I, S. Mendenhall, a notary public in and for the county and State aforesaid, do hereby certify that on this 26th day of February, A. D. 1891, personally appeared before me, Perry J. England, James A. Stone and Albert N. Draper, to me personally known to be the same persons who executed the foregoing certificate, and severally acknowledged that they had executed the same for the purposes therein set forth.

In witness whereof, I have hereunto set my hand and seal the day and year above written.

S. MENDENHALL,
[Seal] Notary Public.

CONSTIUTION AND BY-LAWS

OF THE

Illinois State Bee-Keepers' Association.

CONSTITUTION.

Adopted Feb. 26. 1891.

ARTICLE I.—Name.

This organization shall be known as The Illinois State Bee-Keepers' Association, and its principal place of business shall be at Springfield, Ill.

ARTICLE II.—Object.

Its object shall be to promote the general interests of the pursuit of bee-culture.

ARTICLE III.—Membership.

Section 1. Any person interested in Apiculture may become a member upon the payment to the Secretary of an annual fee of one dollar ($1). (Amendment adopted at annual meeting, November, 1905): And any affiliating Association, as a body, may become members on the payment of an aggregate fee of fifty cents (50c) per member, as amended November, 1910.

Sec. 2. Any persons may become honorary members by receiving a majority vote at any regular meeting.

ARTICLE IV.—Officers.

Section 1. The officers of this Association shall be, President, Vice President, Secretary and Treasurer. Their terms of office shall be for one year, or until their successors are elected and qualified.

Sec. 2. The President, Secretary and Treasurer shall constitute the Executive Committee.

Sec. 3. Vacancies in office—by death, resignation and otherwise—shall be filled by the Executive Committee until the next annual meeting.

ARTICLE V.—Amendments.

This Constitution shall be amended at any annual meeting by a two-thirds vote of all the members present—thirty days' notice having been given to each member of the Association.

BY-LAWS.

ARTICLE I.

The officers of the Association shall be elected by ballot and by a majority vote.

ARTICLE II.

It shall be the duty of the President to call and preserve order at all meetings of this Association; to call for all reports of officers and committees; to put to vote all motions regularly seconded; to count the vote at all elections, and declare the results; to decide upon all questions of order, and to deliver an address at each annual meeting.

ARTICLE III.

The Vice Presidents shall be numbered, respectively, First, Second, Third, Fourth

and Fifth, and it shall be the duty of one of them, in his respective order, to preside in the absence of the President.

ARTICLE IV.

Section 1. It shall be the duty of the Secretary to report all proceedings of the Association, and to record the same, when approved, in the Secretary's book; to conduct all correspondence of the Association, and to file and preserve all papers belonging to the same; to receive the annual dues and pay them over to the Treasurer, taking his receipt for the same; to take and record the name and address of every member of the Association; to cause the Constitution and By-Laws to be printed in appropriate form, and in such quantities as may be directed by the Executive Committee from time to time, and see that each member is provided with a copy thereof; to make out and publish annually, as far as practicable, statistical table showing the number of colonies owned in the spring and fall, and the amount of honey and wax produced by each member, together with such other information as may be deemed important, or be directed by the Executive Committee; and to give notice of all meetings of the Association in the leading papers of the State, and in the bee journals at least four weeks prior to the time of such meeting.

Sec. 2. The Secretary shall be allowed a reasonable compensation for his services, and to appoint an assistant Secretary if deemed necessary.

ARTICLE V.

It shall be the duty of the Treasurer to take charge of all funds of the Association, and to pay them out upon the order of the Executive Committee, taking a receipt for the same; and to render a report of all receipts and expenditures at each annual meeting.

ARTICLE VI.

It shall be the duty of the Executive Committee to select subjects for discussion and appoint members to deliver addresses or read essays, and to transact all interim business.

ARTICLE VII.

The meeting of the Association shall be, as far as practicable, governed by the following order of business:

Call to order.
Reading minutes of last meeting.
President's address.
Secretary's report.
Treasurer's report.
Reports of committees.
Unfinished business.
Reception of members and collection.
Miscellaneous business.
Election and installation of officers.
Discussion.
Adjournment.

ARTICLE VIII.

These By-Laws may be amended by a two-thirds vote of all the members present at any annual meeting.

C. E. YOCOM.
AARON COPPIN
GEO. F. ROBBINS.

Following is a copy of the law passed by the Illinois Legislature May 19, and signed by the Governor June 7, 1911, to take effect July 1, 1911:

State Foul Brood Law.

State Inspector of Apiaries.

Preamble.

§ 1. State Inspector of Apiaries—appointment—term—assistants—per diem.

§ 2. Foul Brood, Etc.—what declared nuisances—inspection—notice to owner or occupant—treatment—abatement of nuisance—appeal.

§ 3. Annual Report.

§ 4. Penalties.

House Bill No. 670.

(Approved June 7, 1911.)

AN ACT *to prevent the introduction and spread in Illinois of foul brood among bees, providing for the appointment of a State Inspector of Apiaries and prescribing his powers and duties.*

Whereas, the disease known as foul brood exists to a very considerable extent in various portions of this State, which, if left to itself, will soon exterminate the honey-bees; and

Whereas, the work done by an individual bee-keeper or by a State inspector is useless so long as the official is not given authority to inspect and, if need be, to destroy the disease when found; and

Whereas, there is a great loss to the bee-keepers and fruit growers of the State each year by the devastating ravages of foul brood;

Section 1. *Be it enacted by the People of the State of Illinois, represented in the General Assembly:* That the Governor shall appoint a State inspector of Apiaries, who shall hold his office for the term of two years, and until his successor is appointed and qualified, and who may appoint one or more assistants, as needed, to carry on the inspection under his supervision. The Inspector of Apiaries shall receive for each day actually and necessarily spent in the performance of his duties the sum of four dollars to be paid upon bills of particulars certified to as correct by the said State Inspector of Apiaries, and approved by the Governor.

Sec. 2. It shall be the duty of every person maintaining or keeping any colony or colonies of bees to keep the same free from the disease known as foul brood and from every contagious and infectious disease among bees. All bee-hives, bee-fixtures or appurtenances where foul brood or other contagious or infectious diseases among bees exists, are hereby declared to be nuisances to be abated as hereinafter prescribed. If the inspector of apiaries shall have reason to believe that any apiary is infected by foul brood or other contagious disease, he shall have power to inspect, or cause to be inspected, from time to time, such apiary, and for the purpose of such inspection he, or his assistants, are authorized during reasonable business hours to enter into or upon any farm or premises, or other building or place used

for the purpose of propagating or nurturing bees. If said inspector of apiaries, or his assistants, shall find by inspection that any person, firm or corporation is maintaining a nuisance as described in this section, he shall notify in writing the owner or occupant of the premises containing the nuisance so disclosed of the fact that such nuisance exists. He shall include in such notice a statement of the conditions constituting such nuisance, and order that the same be abated within a specified time and a direction, written or printed, pointing out the methods which shall be taken to abate the same. Such notice and order may be served personally or by depositing the same in the post office properly stamped, addressed to the owner or occupant of the land or premises upon which such nuisance exists, and the direction for treatment may consist of a printed circular, bulletin or report of the Inspector of Apiaries, or an extract from same.

If the person so notified shall refuse or fail to abate said nuisance in the manner and in the time prescribed in said notice, the Inspector of Apiaries may cause such nuisance to be abated, and he shall certify to the owner or person in charge of the premises the cost of the abatement and if not paid to him within sixty days thereafter the same may be recovered, together with the costs of action, before any court in the State having competent jurisdiction.

In case notice and order served as aforesaid shall direct that any bees, hives, bee-fixtures or appurtenances shall be destroyed and the owner of such bees, hives, bee-fixtures or appurtenances shall consider himself aggrieved by said order, he shall have the privilege of appealing within three days of the receipt of the notice to the County Court of the county in which such property is situated. The appeal shall be made in like manner as appeals are taken to the County Court from judgments of justices of the peace. Written notice of said appeal served by mail upon the Inspector of Apiaries shall operate to stay all proceedings until the decision of the county court, which may, after investigating the matter, reverse, modify or affirm the order of the Inspector of Apiaries. Such decision shall then become the order of the Inspector of Apiaries, who shall serve the same as hereinbefore set forth and shall fix a time within which such decision must be carried out.

Sec. 3. The Inspector of Apiaries shall, on or before the second Monday in December of each calendar year, make a report to the Governor and also to the Illinois State Bee-Keepers' Association, stating the number of apiaries visited, the number of those diseased and treated, the number of colonies of bees destroyed and the expense incurred in the performance of his duties.

Sec. 4. Any owner of a diseased apiary or appliances taken therefrom, who shall sell, barter or give away any such apiary, appliance, queens or bees from such apiary, expose other bees to the danger of contracting such disease, or refuse to allow the Inspector of Apiaries to inspect such apiary, or appliances, shall be fined not less than $50 nor more than $100.

Approved June 7, 1911.

(Bill passed in the 50th General Assembly.)

Bee-Keepers' Association.

THE ORIGINAL BILL.

§ 1. Appropriates $1,000 per annum—proviso.

§ 2. How drawn.

§ 3. Annual Report.

AN ACT *making an appropriation for the Illinois State Bee-Keepers' Association.*

Whereas, The members of the Illinois State Bee-Keepers' Association have for years given much time and labor without compensation in the endeavor to promote the interests of the bee-keepers of the State; and,

Whereas, The importance of the industry to the farmers and fruit-growers of the State warrants the expenditure of a reasonable sum for the holding of annual meetings, the publication of reports and papers containing practical information concerning bee-keeping, therefore, to sustain the same and enable this organization to defray the expenses of annual meetings, publishing reports, suppressing foul brood among bees in the State, and promote the industry in Illinois;

Section 1. *Be it enacted by the People of the State of Illinois represented in the General Assembly:* That there be and is hereby appropriated for the use of the Illinois State Bee-Keepers' Association the sum of one thousand dollars ($1,000) per annum for the years 1917, 1918. For the purpose of advancing the growth and developing the interests of the bee-keepers of Illinois, said sum to be expended under the direction of the Illinois State Bee-Keepers' Association for the purpose of paying the expenses of holding annual meetings, publishing the proceedings of said meetings, suppressing foul brood among bees in Illinois, etc.

Provided, however, That no officer or officers of the Illinois State Bee-Keepers' Association shall be entitled to receive any money compensation whatever for any services rendered for the same, out of this fund.

Sec. 2. That on the order of the President, countersigned by the Secretary of the Illinois State Bee-Keepers' Association, and approved by the Governor, the Auditor of Public Accounts shall draw his warrant on the Treasurer of the State of Illinois in favor of the treasurer of the Illinois State Bee-Keepers' Association for the sum herein appropriated.

Sec. 3. It shall be the duty of the treasurer of the Illinois State Bee-Keepers' Association to pay out of said appropriation, on itemized and receipted vouchers, such sums as may be authorized by vote of said organization on the order of the President countersigned by the Secretary, and make annual report to the Governor of all such expenditures, as provided by law.

Itemized in the Omnibus Bill as follows:

For Shorthand Reporting	$ 200.00
For Postage and Stationery	100.00
For Printing	500.00
Expense of Meetings	200.00
Total Amount of the Appropriation	$1,000.00

The Assembly ruled that this is not to be paid in *lump* but drawn on itemized accounts.

Code of Rules and Standards for Grading Apiarian Exhibits at Fair as Adopted by Illinois State Bee-Keepers' Association.

COMB HONEY.

Rule 1. Comb honey shall be marked on a scale of 100. as follows:

Quantity	40
Quality	40
Style of display	20

Rule 2. Points of quality should be:

Variety	5
Clearness of capping	10
Completeness of capping	5
Completeness of filling	5
Straightness of comb	5
Uniformity	5
Style of section	5

Remarks: 1. By variety is meant different kinds, with regard to the sources from which the honey is gathered, which adds much interest to an exhibit.

2. By clearness of capping is meant freedom from travel stain and a water soaked appearance. This point is marked a little high, because it is a most important one. There is no better test of the quality of comb honey than the appearance of the cappings. If honey is taken off at the proper time, and cared for as it should be, so as to preserve its original clear color, body and flavor will take care of themselves, for excellence in the last two points always accompanies excellence in the first. Clover and basswood honey should be white; heartsease, a dull white tinged with yellow; and Spanish needle, a bright yellow.

3. By uniformity is meant closeness of resemblance in the sections composing the exhibit.

4. By style is meant neatness of the sections freedom from propolis, etc.

5. Honey so arranged as to show every section should score the highest in style of display, and everything that may add to the tastiness and attractiveness of an exhibit should be considered.

EXTRACTED HONEY.

Rule 1. Extracted honey should be marked on a scale of 100, as follows:

Quantity	40
Quality	45
Style of display	15

Rule 2. The points of quality should be:

Variety	10
Clearness of color	5
Body	5
Flavor	5
Style of package	10
Variety of package	5
Finish	5

Remarks: 1. Light clover honey pouring out of a vessel is a very light straw color; Spanish needle, a golden hue, and dark clover honey, a dull amber.

2. Style of package is rated a little high, not only because in that consists the principal beauty of an exhibit of extracted honey, but also because it involves the best package for marketing. We want to show honey in the best shape for the retail trade, and that, in this case, means the most attractive style for exhibition. Glass packages should be given the preference over tin; flint glass over green, and smaller vessels over larger, provided the latter run over one or two pounds.

3. By variety of package is meant chiefly different sizes; but small pails for retailing, and, in addition, cans or kegs (not too large) for wholesaling, may be considered. In the former case, pails painted in assorted colors, and lettered "Pure Honey," should be given the preference.

4. By finish is meant capping, labeling, etc.

5. Less depends upon the manner of arranging an exhibit of extracted than of comb honey, and for that reason, as well as to give a higher number of points to style of package, a smaller scale is allowed for style of display.

SAMPLES OF COMB AND EXTRACTED HONEY.

Rule 1. Single cases of comb honey, entered as such for separate premiums, should be judged by substantially the same rules as those given for a display of comb honey, and samples of extracted, by those governing displays of extracted honey.

Rule 2. Samples of comb or extracted honey, as above, may be considered as part of the general display in their respective departments.

GRANULATED HONEY.

Rule 1. Candied or granulated honey should be judged by the rules for extracted honey, except as below.

Rule 2. The points of quality should be:

Variety	10
Fineness of grain	5
Color	5
Flavor	5
Style of package	10
Variety of package	5
Finish	5

Rule 3. An exhibit of granulated honey may be entered or considered as part of a display of extracted honey.

NUCLEI OF BEES.

Rule. Bees in observation hives should be marked on a scale of 100, as follows:

Color and markings	30
Size of bees	30
Brood	10
Queen	10
Quietness	5
Style of comb	5
Style of hive	10

Remarks: 1. Bees should be exhibited only in the form of single frame nuclei, in hives or cages with glass sides.

2. Italian bees should show three or more bands, ranging from leather color to golden or light yellow.

3. The markings of other races should be those claimed for those races in their purity.

4. A nucleus from which the queen is omitted should score zero on that point.

5. The largest quantity of brood in all stages or nearest to that should score the highest in that respect.

6. The straightest, smoothest and most complete comb, with the most honey consistent with the most brood, should score the highest in that respect.

7. That hive which is neatest and best made and shows the bees, etc., to the best advantage should score the highest.

QUEEN BEES.

Rule. Queen bees in cages should be marked on a scale of 100, as follows:

Quantity	40
Quality and variety	40
Style of caging and display	20

Remarks: 1. The best in quality consistent with variety should score the highest. A preponderence of Italian queens should overweigh a preponderance of black ones, or, perhaps, of any other race or strain; but sample queens of any or all varieties should be duly considered. Under the head of quality should also be considered the attendant bees. There should be about a dozen with each queen.

2. Neatness and finish of cages should receive due consideration, but the principal points in style are to make and arrange the cages so as to show the inmates to the best advantage.

BEESWAX.

Rule. Beeswax should be marked on a scale of 100, as follows:

Quantity	40
Quality	40
Style of display	20

Remarks: 1. Pale, clear, yellow specimens should score the highest, and the darker grades should come next in order.

2. By style is meant chiefly the forms in which the wax is molded and put up for exhibition. Thin cakes or small pieces are more desirable in the retail trade than larger ones. Some attention may be given to novelty and variety.

Foul Brood and Other Diseases of Bees.

Foul brood—bacillus alvei—is a fatal and contagious disease among bees, dreaded most of all by bee-keepers. The germs of disease are either given to the young larval bee in its food when it hatches from the egg of the queen-bee, or it may be contagion from a diseased colony, or if the queen deposits eggs, or the worker-bees store honey or pollen in such combs. If in any one of the above cases, the disease will soon appear, and the germs increase with great rapidity, going from one little cell to another, colony to colony of bees, and then to all the neighboring apiaries, thus soon leaving whole apiaries with only diseased combs to inoculate others. The Island of Syria in three years lost all of its great apiaries from foul brood. Dzierzon, in 1868, lost his entire apiary of 500 colonies. Cowan, the editor of the British Bee Journal, recently wrote: "The only visible hindrance to the rapid expansion of the bee industry is the prevalence of foul brood, which is so rapidly spreading over the country as to make bee-keeping a hazardous occupation."

Canada's foul brood inspector, in 1890 to 1892, reported 2,395 cases, and in a later report for 1893 to 1898, that 40 per cent of the colonies inspected were diseased. Cuba is one of the greatest honey-producing countries, and was lately reported to me by a Wisconsin bee-keeper who has been there, and will soon return to Wisconsin: "So plentiful is foul brood in Cuba that I have known whole apiaries to dwindle out of existence from its ravages, and hundreds more are on the same road to sure and certain death. I, myself, took, in 90 days in Cuba, 24,000 pounds of fine honey from 100 colonies, but where is that apiary and my other 150-colony apairy? Dead from foul brood." Cuba, in 1901, exported 4,795,600 pounds of honey, and 1,022,897 pounds of beeswax.

Cuba at present has laws to suppress foul brood, and her inspector is doing all possible to stamp the same from the island.

Even in Wisconsin I know of several quite large piles of empty hives, where also many other apiaries where said disease had gotten a strong foothold.

By the kindness of the Wisconsin bee-keepers, and, in most cases, by their willing assistance, I have, during the last five years, gotten several counties free of the disease, and at the present writing, March 12, 1902, have what there is in Wisconsin under control and quarantined. This dreadful disease is often imported into our State from other States and countires, so we may expect some new cases to develop until all the States shall enact such laws as will prevent further spread of the same. Arizona, New York (1899), California (1891), Nebraska (1895), Utah (1892), Colorado (1897), have county inspectors, and Wisconsin (1897), and Michigan (1901) have State inspectors. The present Wisconsin law, after five years of testing and rapid decrease of the disease, is considered the best, and many other States are now making efforts to secure a like law.

There are several experimental apiaries in Canada, under control of the Ontario Agricultural College; also a few in the United States, especially in Colorado, that have done great work for the bee-keeping industry, and their various published bulletins on the same are very valuable. The Wisconsin State Bee-Keepers' Association has asked that an experimental apiary might be had on the Wisconsin Experimental Farm, but at present there are so many departments asking for aid that I fear it may be some time before bee-culture will be taken up.

CAUSES OF FOUL BROOD.

1. Many writers claim foul brood originates from chilled or dead brood. Dr. Howard, of Texas, one of the best practical modern scientific experimenters, a man of authority, has proven beyond a doubt that chilled or common dead brook does not produce foul brood. I have, in the last

five years, also proven his statement to be true in Wisconsin, but I do believe such conditions of dead brood are the most favorable places for lodgment and rapid growth of disease. Also, I do not believe foul brood germs are floating in the air, for, if they were, why would not every brood-comb cell of an infected hive become diseased? I believe that this disease spreads only as the adult bees come in contact with it, which is often through robber-bees. Brood-combs should not be removed from any colony on cold or windy days, nor should they be left for a moment in the direct rays of sunshine on hot days.

2. The foul brood may be caused by the need of proper food and temperature. Generally this disease does not appear to be serious during a honeyflow, but at the close of the honey season, or at time of scarcity, it is quite serious, and as the bees at such times will rob anywhere they can find stores, whether from healthy or diseased combs, it is the duty of every bee-keeper to keep everything carefully protected. Hive-entrances contracted, no old combs or any article with a drop of honey in where the bees can get to it. While honey is coming in from the various flowers, quite a portion is used direct as food for the larval bee, and with such no disease would be fed to the bees. Such fed bees, even in a diseased hive, will hatch, as is often the case. I never knew a case where a bee hatched from a brood cell that had ever had foul brood in. If the germs of disease are there in the dried scale attached to the lower side walls, bees will store honey, therein; the queen will deposit eggs, or the cell may be filled with pollen, or beebread, as some call it. Said honey, or pollen, when it comes in contact with those germs of disease, or the food given to the young bee, if in the proper temperature, said germs of disease will grow and develop rapidily.

CAUSES OF CONTAGION.

I fully believe that if the history of foul brood in Wisconsin were known, nearly every case could be traced to contagion from diseased combs, honey, or from home diseased queen-breeders' cages. There are some instances where I have traced the history of contagion in Wisconsin:

1. Diseased apiaries, also single colonies, sold either at auction or private sale. Several law suits have resulted in the settlement of some of the cases.

2. Brood-combs and various implements from diseased hives, used by other bee-keepers, and borrowed articles.

3. All the bees in an apiary dead from foul brood, and the hives having an abundance of honey in the brood-combs, said combs placed out by the side of hives, so that neighbor's bees might get the honey. From those combs I lined robber bees to seven other apiaries, and each time became diseased and were treated.

4. Robber bees working on empty honey packages in the back yards of grocery stores and baking factories. Said honey came from diseased apiaries, some located in far distant states, even Cuba.

5. Loaning of hives, combs, extractors, and even empty honey-packages.

6. Buying honey from strangers, or not knowing where it was produced, and feeding it to bees without boiling the honey.

7. Too common a practice of using old brood-combs from some apiary where the owner's bees have died from "bad luck," as he calls it.

8. Queen-bee—by buying queen bees from strangers and introducing them in the cages they came in. I have traced several new outbreaks of the disease to the hives where such queens were introduced, and the queens came from distant states. To be safe, on arrival of queen, put her carefully alone in a new and clean cage with good food in it. Keep her in there, warm and comfortable, for a few hours before introducing. The shipping cage and every bee that came with the queen should be put in the stove and burned. I do not think there is any danger from the queen so treated, even from diseased hives, but I do know of many cases where disease soon appear in the hives, where the shipping cage and bees were put in with the colony. The great danger is in the food in said cage being made from diseased honey. I was called to attend a state bee-keepers' meeting in another state, and I asked if any there had had experience with foul brood. There was a goodly number of raised hands. Then I asked: "Do any of you think you got the disease by buying queen-bees?" Again several hands were raised. Even bee-keepers there had traced the disease in their apiaries to the buying of queens, and all from the same breeder. If you get queens from abroad, I hope you will do with them as I have described above. Better be on the safe side.

EXPERIMENTS.

1. A prominent Wisconsin bee-keeper some years ago had foul brood among his bees so bad that he lost 200 colonies before the disease was checked. Having a honey-extractor and comb-foundation machine, he first boiled the hives in a large sorghum pan, then in a kettle all combs were melted after the honey was extracted; the honey was boiled and also the extractor and implements used. The bees were returned to their hives on comb-foundation he made from the wax made from the melted combs, then fed the boiled honey. Several years have passed, and there has been no sign of disease in his apiary since.

2. Foul brood germs are not always killed when exposed to a temperature of 212 deg. F. (boiling point) for 45 minutes. But in every case where the combs are boiled in boiling water, and same were well stirred while boiling, no germs were alive.

3. Foul brood in brood-combs is not destroyed when exposed to the temperature of Wisconsin winters of 20 deg. below zero, and in one case I developed foul brood from combs that had been exposed to 28 deg. below zero.

4. Honey, if stored in diseased combs, acts as a preserving medium, and in such cases the germs of disease will remain so long as the comb is undisturbed. Four years at least.

5. Honey or beeswax, or the refuse from a solar or sunheat extractor, is not heated enough to kill foul brood germs. Several cases of contagion where robber bees worked on solar extractor refuse or honey.

6. Comb-foundation made by supply manufacturers is free from live germs of disease and perfectly safe to use. To prove this experiment beyond a doubt, I took a quantity of badly diseased brood-combs from several apiaries and render each batch of combs into wax myself on the farm where found. Then on my own foundation mill I made some brood-foundation. I also took quite a quantity more of said wax, went to two wholesale comb-foundation manufacturers, and both parties willingly made my experimental wax into comb-foundation, just the same as they do every batch of wax. I then divided the various makes of foundation, and selected 20 of the best bee-yards in Wisconsin, where no disease has ever been known; had the same placed in 62 of their best colonies, and in every case no signs of disease have appeared. Those same colonies continue to be the best in the various apiaries.

SYMPTOMS OF FOUL BROOD.

1. The infected colony is not liable to be as industrious. Hive entrance with few guard bees to protect their home. Sometimes fine dirt or little bits of old comb and dead bees in and around the hive-entrance, and often robber bees seeking entrance.

2. Upon opening the hive, the brood in the combs is irregular, badly scattered, with many empty cells which need inspection.

3. The cappings over healthy brood are oval, smooth, and of a healthy color peculiar to honey-bee brood, but if diseased, the cappings are sunken, a little darker in color, and have ragged pin holes. The dead larval bee is of a light color, and, as it is termed, ropy, so that if a toothpick is inserted and slowly withdrawn, this dead larva will draw out much like spittle or glue.

4. In this ropy stage there is more or less odor peculiar to the disease; it smells something like an old, stale gluepot. A colony may be quite badly affected and not admit much odor, only upon opening of the hive or close examination of the brood. I have treated a few cases where the foul brood odor was plainly noticed several rods from the apiary.

5. Dried Scales—If the disease has reached the advanced stages, all the above described conditions will be easily seen and the dried scales as well. This foul matter is so tenacious that the bees cannot remove it, so it dries down on the lower side-wall of the cell, midway from the bottom to front end of the cell, seldom on the bottom of the cell. According to its stage of development, there will be either the shapeless mass of dark brown matter, on the lower side of the cell, often with a wrinkled skin covering, as if a fine thread had been inserted in the skin lengthwise and drawn enough to form rib-like streaks on either side. Later on it becomes hardened, nearly black in color, and in time dries down to be as thin as the side walls of the cell. Often there will be a small dried bunch at the front end of the cell, not larger than a part of a common pin head. To see it plainly, take the comb by the top bar and hold it so that a good light falls into the cell at an angle of 75 degrees from the tip of the comb, while your sight falls upon the cell at an angle of about 45 degrees. The scales, if present, will easily be seen as above described. This stage of disease in combs is easily seen, and is always a sure guide or proof of foul brood. Such combs can never be used safely by the bees, and

must be either burned or carefully melted. Be sure not to mistake such marked combs in the spring for those soiled with bee dysentery. The latter have a somewhat similar appearance. but are more or less surface soiled, and will also be spotted or have streaked appearance by the dark brown sticky excrements from the adult bees.

TREATMENT.

"A bee-keeper who does not discover foul brood, before his nostrils remind him that there is something wrong with his bees, is not the proper person to treat the case." Dr. Howard, in his valuable book on foul brood, states: "I regard the use of all drugs in the treatment of foul brood as a useless waste of time and material, wholly ineffectual, inviting ruin and total loss of bees. Any method which has not for its object the entire removal of all infectious material beyond the reach of both bees and brood, will prove detrimental and destructive, and surely encourage the recurrence of the disease." In Wisconsin, I have tried many methods of treatment, and cured some cases with each method; but the one that never fails, if carefully followed, and that commends itself, is the McEvory treatment. Canada's foul brood inspector has cured foul brood by the wholesale—thousands of cases.

McEVOY TREATMENT.

"In the honey season, when the bees are gathering honey freely, remove the combs in the evening and shake the bees into their own hives; give them frames with comb-foundation starters, and let them build comb for four days. The bees will make the starters into comb during the four days, and store the diseased honey in them, which they took with them from the old comb. Then, in the evening of the fourth day, take out the new combs and give them comb-foundation (full sheets) to work out, and then the cure will be complete. By this method of treatment all the diseased honey is removed from the bees before the full sheets of foundation are worked out. All the old foul-brood combs must be burned or carefully made into wax, after they are removed from the hives, and all the new combs made out of the starters during the four days must be burned or made into wax, on account of the diseased honey that would be stored in them. All the curing or treating of diseased colonies should be done in the evening, so as not to have any robbing done or cause any of the bees from the diseased colonies to mix and go with the bees of healthy colonies. By doing all the work in the evening, it gives the bees a chance to settle down nicely before morning, and then there is no confusion or trouble. This same method of curing colonies of foul brood can be carried on at any time from May to October, when the bees are not getting any honey, by feeding plenty of sugar syrup in the evenings to take the place of the honey flow. It will start the bees robbing and spread the disease, to work with foul brood colonies in warm days when the bees are not gathering honey, and for that reason all work must be done in the evenings when no bees are flying.

"When the diseased colonies are weak in bees, put the bees, two, three, or four colonies together, so as to get a good sized colony to start the cure with, as it does not pay to spend time fussing with little, weak colonies. When the bees are not gathering honey, any apiary can be cured of foul brood by removing the diseased combs in the evening and giving the bees frames with comb-foundation starters on. Then, also, in the evening feed the bees plenty of sugar syrup, and they will draw out the foundation and store the diseased honey which they took with them from the old combs; on the fourth evening remove the new combs made out of the starters, and give the bees full sheets of comb-foundation, and feed plenty of sugar syrup each evening, until every colony is in first class order. Make the syrup out of granulated sugar, putting one pound of water to every pound of sugar, and bring it to a boil. As previously stated, all the old comb must be burned, or made into wax, and so must all new combs made during the four days. No colony is cured of foul brood by the use of any drug.

"A. I. Root, of Medina, Ohio, says: 'The starvation plan, in connection with burning the combs and frames and building the hives, has worked the best in treating foul brood. It never appeared after each treatment, though it did in some cases where the hives were honey-stained and not boiled, thus comfirming the theory or fact of spores.'"

All the difference from the McEvory treatment that I practice is this: I dig a deep pit on level ground near the diseased apiary, and after getting a fire in the pit, such diseased combs, frames, etc., as are to be burned are burned in this pit in the evening, and then the fresh earth from the pit returned to cover all from sight. Often I use some kerosene oil, a little at a time being poured on old brood combs, or those having much honey in, as they are

hard to burn. If diseased combs with honey in are burned on the surface of the soil, there is great danger; the honey, when heated a little, will run like water on the soil, and in the morning the robber bees will be busy taking home the diseased honey that was not heated enough to kill germs of foul brood.

I also cage the queen while the bees are on the five or six strips of foundation. It helps to keep the colony from deserting the hive and going to other colonies.

R. L. Taylor, Michigan University Experimental Apiary, reports: "The plan that the colony be shaken out into another hive after being allowed to build comb for four days, I have proven, in 100 cases, to be unnecessary."

In Wisconsin I, too, have cured several cases by the one transferring, when honey was not coming in very freely, but it is better, and a great saving of time to both bees and owner, to exchange in three or four days, those foundation starters, for full sheets of foundation. Diseased brood-combs and those with honey in, if melted in a sun or solar extractor, the wax, honey or residue is not hot enough to kill germs of foul brood. This I have proven by several experiments. It must be boiled and well stirred while boiling, to be safe.

I do not believe in, or practice, burning any property, such as hives, bees, beeswax or honey, that can be safely treated and saved. Many times it is poor economy to save all, and so many bee-keepers are not so situated as to keep all diseased materials from robber bees while taking care of it; the best and only safe way is to burn the diseased combs and frames.

UTAH.

Utah has county inspectors, and from one who has remarkable success I copy the report of his method of treatment:

"Wherever found it should be dealt with earnestly and with dispatch. If the colony is weak, I recommend something to kill the bees, and, in order to do this without letting a bee escape, take a tablespoonful of sulphur and place it in the hive entrance of the hives; if there is any breeze, turn the hive so it will blow in the entrance. Then fire the sulphur and it will soon kill the bees. This should be done early in the morning, before any of the bees are flying, as one bee escaping from the hive might carry the disease to any colony with which it may take up its abode. If the colony is a strong one, I would keep the entrance partly closed, so as to prevent any other bees from getting in. Then as soon as fruit blossoms come out so the bees can obtain honey, I treat them. I procure an empty box of any kind, so it is clean, then find the queen, put her in a screen wire cage, which is easily made. Take a small piece of screen roll it up and tie a string around either end; cork up one end, then place the queen and a few workers, for company, in the cage, and place in the other end cork. Put same in this box, and shake all the bees out of their hive into this box. This must be done in the evening, when no bees are flying. Keep the queen in this box for 24 to 48 hours, allowing the bees to fly in and out as they please. Next take a clean hive, with good, healthy combs or foundation, and shake bees into it, letting the queen go, and they will be free from disease. The old combs are melted into wax, bringing same to a good boil. Often washing with boiling water any hives or implements that might contain disease. Whenever strictly followed, this has affected a cure."—C. Wilcox, Emery Co., Utah.

PICKLED BROOD.

Some seasons pickled brood is quite bad among bees, and in a few cases I have known it to reduce large colonies, even large apiaries, to doubtful hopes, but those same colonies, after I gave them treatment, were in a month free from disease. Sometimes it takes as careful handling as if foul brood. I do not believe it is contagious, for all I have seen 60 colonies in one apiary badly reduced by it. As an experiment, one of my out-apiaries had 50 colonies at one time with pickled brood. I treated them, and all were soon free from dead brood. At the same time I took ten of the worst brood-combs, where at least two-thirds of the brood were dead, and placed these combs in other strong, healthy colonies. They at once cleaned out the dead brood, and reared as nice brood as one could ask for.

SYMPTOMS.

The larval bees (in last of May and through June) show light brown spots; a little later the cappings have small holes in—the cappings are not shrunken or dark colored, as in foul brood. The dead bee will be first swollen, with a black head dried to a hard bunch, and often turned up —Chinaman-shoe-like. The skin of the dead bee is quite tough, and, if punctured, the thin, watery fluid of the body will flow as freely as water, often a little yellow or brownish colored from the dissolved pollen from the abdomen of the bee. It has very little or no smell; does

not at any time stick to the walls of the comb; is easily pulled out of the cell; is never ropy or sticky, and, if the colony is properly cared for, the bees will take care of themselves. Plenty of liquid, unsealed honey and pollen near the brood, and hives so protected as to keep the bees and brood comfortable on cold days and nights.

Never put bees on old black brood-combs, or those with dead broods in; better make wax of the combs, and give the bees full sheets of brood-comb foundation.

TREATMENT.

Keep all colonies strong, with plenty of unsealed honey near the brood, and if hives are properly sheltered, so as to be warm on cold days and nights, there will be little or no pickled brood. If the queen is old, shows signs of weakness by putting several eggs in one brood-cell and nursing several others, so that the brood is patchy, I would kill such a queen, feed the bees a little, and, when queen-cells are started, remove them all and give them a queen and bees, between two of her own brood-combs from a hive where she has lived. I do not think pickled brood is often the fault of the queen, but rather a lack of proper food and heat in the hive. In most cases, a shortage of liquid honey, or moldy pollen, even in hives with plenty of sealed honey in the outer combs. There is a time in spring in Wisconsin, between dandelions and white clover bloom, when there is no honey coming in from flowers, and often cold days and nights, so that the live bees consume the liquid, unsealed honey first, and cluster in a compact body to keep warn; the result often is the larval bee, just changed from the egg to a tender little grub, is either starved, half-fed or chilled, so that it grows slowly, and too often it dies, and then it is we first notice this about the time white clover honey begins to come in. In other parts of the state, where pickled brood appeared, it was from the same cause, and at other dates, which was due to a difference of time of honey bloom.

Wherever I fed daily some honey, or even sugar syrup, and kept the hive warm, all dead brood soon disappeared while in the same apiaries other colonies affected and not so treated, continued for some time, but got rid of it as soon as treated.

Strong colonies of bees in the fall, with a young laying queen, and an abundance of good honey, sealed or capped by the bees, if properly cared for during winter, whether in the cellar or in chaff hives, wintered out of doors in sheltered location, seldom have pickled brood, chilled or other dead brood, or dysentery, and are the colonies that give their owner profit.

BLACK BROOD.

Black brood is another fatal and contagious disease among bees, affecting the old bees as well as the brood. In 1898, 1899 and 1900, it destroyed several apiaries in New York. Last year I found one case of it in Wisconsin, which was quickly disposed of. Dr. Howard made more than a thousand microscopic examinations, and found it to be a distinct form of bacteria. It is most active in sealed brood. The bees affected continue to grow until they reach the pupa stage, then turn back and die. At this stage there is a sour smell. No decomposition from putrefactive germs in pickled brood. In black brood the dark and rotten mass in time breaks down and settles to lower side-walls of the cell; is of a watery, granulated, syrupy fluid, jelly-like; is not ropy or sticky, as in full brood, and has a peculiar smell, resembling sour, rotten apples. Not even a house fly will set a foot upon it.

TREATMENT.

Best time is during a honey-flow, and the modified McEvoy plan, much as I have treated foul brood, by caging the queen five days, remove the foundation starters and giving full sheets, keeping queen caged five days longer. As great care should be taken of diseased hives, combs, honey, etc., as in foul brood.

DYSENTERY.

Dysentery among bees in Wisconsin in the spring of the year is often quite serious. many colonies die with it. Dysentery is the excrements of the old bees; it is of brownish color, quite sticky, and very disagreeable smelling, and is sometimes mistaken for foul brood.

CAUSES.

1. Bees confined too long in the hives, so that they can no longer withhold their excrements, and are compelled to void the same on the other bees and combs.

2. Poor winter stores, gathered in the fall from honey-dew, cider mills, sorghum mills, rotten fruit; also some kinds of fall flowers

3. Old and especially moldy pollen or bee-bread.

4. Hives too cold or damp. If moisture from the breath of the bees is not carried out of the hive by some means, such as through a deep cushion of some kind over the bees that will absorb moisture and at the same time retain the heat, or by some means of ventilation, so that all is dry and comfortable. If mold forms on the combs or cellar is so damp as to form mold, there is great danger the bees will have dysentery and die.

TREATMENT.

1. First of all, have an abundance of combs of sealed clover or basswood honey in brood-frames carefully saved, and see that each colony is wintered on such food. Three or four such combs will winter a fair colony safely, if confined on those combs late in the fall, and the hive contracted to fit the same. This is one of the most important conditions for success in wintering.

2. If in the fall the bees have gathered this unwholesome honey from the above named sources, it should all be extracted and either exchanged for those honey-combs, or feed the bees good honey or sugar syrup until winter stores are secured. This should be done before cold weather in the fall.

3. Hives contracted and made comfortable, whether in cellar or outdoors.

4. If wintered in chaff hives outdoors, with feed as above directed, and there come one or two warm spells during winter, so that the bees can have a cleansing flight, they will not have dysentery or dead brood, and will be much stronger when clover opens.

If wintered in the cellar, the bees will not need so much honey, and if the winters are generally long, with doubtful warm spells, the cellar will be best. But to keep the bees from dysentery, so often fatal to cellar-wintered bees, they should have such winter stores as above spoken of, then the cellar kept at a medium temperature, about 32 deg. F., ventilated so the air is fresh, and no mold will form in the cellar. Fresh air-slaked lime on the bottom of the cellar may help, if it is damp or has poor air.

5. Dysentery will not appear if bees are kept on sugar syrup, or best grade white clover or basswood honey, and are in a dry place, either sheltered by cellar or chaff-hive.

DR. A. C. BAXTER, President.

PROCEEDINGS

OF THE

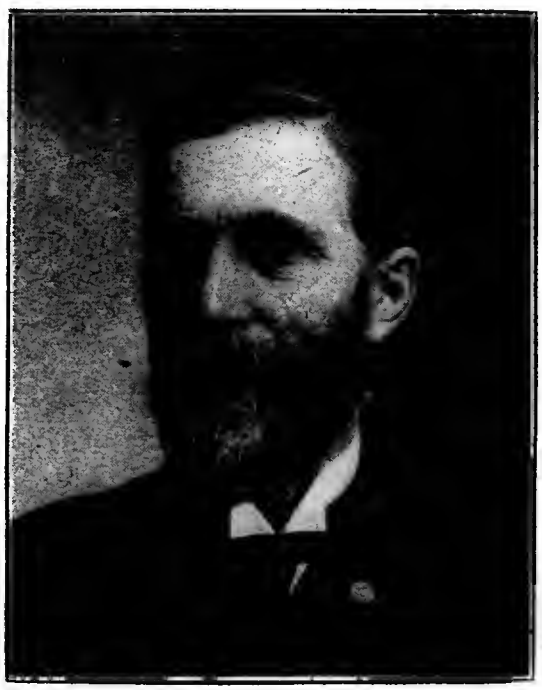
Twenty-Seventh Annual Session

OF THE

Illinois State Bee-Keepers' Association

November 14 and 15, 1917

Leland Hotel, Springfield, Illinois.



JAS. A. STONE, Secretary.

The twenty-seventh Annual Meeting of the Illinois State Bee-Keepers' Association was held in the Sun Parlor of the Leland Hotel, November 14 and 15, 1917.

The meeting was called to order by the President, Mr. Emil J. Baxter, at 10:00 a. m. November 14.

President Baxter—The first number on the program will be the invocation by Rev. C. Warber, of Alhambra, Illinois.

PRAYER BY REV. C. WARBER.

Father, Thou Giver of all good and perfect gifts, we come before Thee with thanksgiving, acknowledging in gratitude the manifold blessings that Thou hast bestowed upon us in love and mercy. Thou hast given unto us and provided us with the fruits of the earth and the sweetness of the flower. Thou hast been our guide and our strength during the past year. Thou hast led us aright, Thou hast been with us present with Thy Holy Spirit. Thou hast not only provided for us things necessary for our bodily welfare, but Thou hast above all, in Christ Jesus our Saviour, provided an eternal salvation by sending Thine only begotten Son, for Thou hast so loved the world that Thou to us in the fullness of time hast sent Thine only begotten Son, our Lord Jesus Christ into this world to redeem the world of all mankind from sin and the powers of satan.

We are gathered here this morning and will be during these two days to study one of the wonders of creation and through it many a lesson Thou wilt teach unto us. Teach us, oh, Lord, not only to gather in store as does the bee those things which are necessary for our earthly welfare, but also lay up treasures in heaven where the

robber does not get past the guard and steal, where the moth does not corrupt. We ask Thee to teach us that we have in this life those things that make it beautiful, that make life worth living, but above all, we have in heaven in store for us that salvation, that peace and that happiness, that rest that is sweeter than the honey in the honey-comb.

We ask Thee to be with us in our deliberations, in our studies these days. Wilt Thou send unto us wisdom; wilt Thou give unto the speakers that blessing that they may be enabled to teach us in such a way that we will be able to understand Thy work and carry out that which Thou hast bidden us, that which Thou hast entrusted to our care to-day. We ask Thee to be with this Association, with every member, with its officers. May we all be found doing our duty while we are here upon the earth. We ask Thee to be with us and bless us, for Jesus, our Saviour's sake, Amen.

President Baxter—The next number will be the Welcome Address, by Mr. Barber.

ADDRESS OF WELCOME.

Mr. President, Ladies and Gentlemen: It is certainly an honor as well as pleasure for me, on behalf of the city of Springfield, to welcome you to this city. I am not much acquainted with bees, but I am a lawyer, and one of my friends facetiously remarked that since I was accustomed to stinging people, I would be all right to be classed with the bees. But lawyers sting people offensively, like the wasp, I am afraid, and not defensively, like the bees, so I believe the parallel falls short. But we certainly honor the bee-keepers and the man who understands bees.

I have been looking the last few days to see what I could find out about bees, and I believe honey was one of the first foods given to man. In the earliest history of man we find records where man for his desert used honey, and in Holy Writ in numerous places—although the Rev. Mr. Warber is more familiar with that than I am—there always will be found reference to the bee and to honey. In fact, way early in the Bible we find that the Amorites were driven as though they were driven by bees, showing that in those early days the old writers knew something about robbing bees and what it means to be driven by the bees. And then in King Solomon's parables, the wise man advises the young man in these words, "My son, eat honey, because it is good, and honey comb, which is sweet to the taste." Showing in those days, like some of us in these days, men preferred honey in the honey comb to the extracted honey and he advised the young man to eat not only the honey, but the honey comb, which is sweet to the taste. And then in Isaiah, we find where Isaiah tells of the coming forth of an Emanuel who will be the Savior of the people. He used these words: "Butter and honey shall he eat, that he may know to refuse the evil and choose the good." Which is very interesting when you think of the theory that a man is developed by the food that he eats, and that the coming Savior was to eat butter and honey in order that he might be taught to refuse evil and choose the good.

And so you see from the earliest times honey was recognized as a safe diet for mankind, and throughout all the ages it has been a safe diet, and in these days of stress and starvation, when we talk about conserving food and adding to the store of food in order to help other nations that are in need, there is no more important time in the history of the world when a producer of something counts as much, and along with all other producers, let me say, the honey producer is entitled to as prominent a place as any other man, for there is a shortage of sweets, we are told on every hand. But I am sure as long as there is a large supply of honey produced in our own country, we can manage to get along all right, and send the sugar to the boys abroad.

Not long ago a mother was telling me that her son had written her from the trenches in France, saying, "Oh, if I could only get a big chunk of honey from that jar in the cellar to eat with my bread in the morning." But I guess there is no way of sending honey to them, because there is no way of sending liquids, and that is for the reason that it cannot be transported as easily in these times as solid foods, and here at home, I am sure, as a lawyer and a citizen I can say that there is no better breakfast than wheat cakes or buckwheat cakes and honey. Some say they like syrup, but give me good old honey, which takes me back to the days of my youth, and the time when we used to hunt bee trees, and the man who was able to stand out on a sunny morning near the clover field and follow the flight of the bees and take the direction back to where the bee tree stood, and follow them right along through the forest and was able to find the bee was looked upon as a wonder by us boys, and we then had an exhibition of just what it meant to attack a bee in

his home and to steal his honey, and we had painful remembrances of it.

Ladies and gentlemen, you are certainly entitled, as I say, to the commendation of the people of this State and to the consideration of our Legislature. I learn that the Legislature niggardly allowed $1,000 a year to bee-keepers, counting them possibly not a very important asset to the producers of the State's food, but I want to say that they need education because, as I have already stated, from earliest times there is no more staple article of food, no more desirable article of food, no article of food that helps build up man and make a man of one who would not otherwise be, than honey, and so, Benefactors of the Human Race, I greet you in behalf of the city of Springfield. I wish to say that anything that you see that you need or want to make your stay in this city pleasurable, why, we want you to call the Secretary of the Commercial Association and I am sure he will be ready at all times to grant you any favors he can, for we are proud to have you happy, to have you as a part of the great world's food producers. I thank you.

The President—The next number will be the President's address. Dr. Baxter, will you take the chair?

PRESIDENT'S ADDRESS.

I am sorry to say that I had an address prepared and either forgot it at home or lost it on the way. I have been so busy this fall that I have been pushed to the limit.

We are very thankful for the coridal welcome given us by the city of Springfield. We have been meeting here so long and we have been treated so well by the citizens of Springfield and the officials that it would seen almost unnatural to meet anywhere else in the world.

I do not think I could enjoy a State meeting as well anywhere else as I have enjoyed it here in Springfield for many years and we appreciate the welcome given us very much.

Now in regard to the bee conditions for the past season, they have been rather discouraging. The season opened up very encouragingly, but on account of the weather conditions and other things, the prospects have been very disappointing. I do not believe there is any part of the State where there has been any crop to any extent, except probably along the Illinois River bottoms. The clover promised pretty well last fall, but the dry weather last summer, being practically no rain at all from the 23d of June until late in August or beginning of September and then very little, stunted the clover and killed it out in many places, and then the open, dry winter, with the extreme cold weather, just about used it up, so that what little was left this spring did not spread and develop as it might have done if we had had timely and abundant rains. Nevertheless, I looked for a pretty good fall crop. We had a great many fall flowers, during the summer lots of Spanish needle and lots of Heartsease and a great deal of sweet clover, but it failed to develop, the rain did not make them grow as they should grow and then there was the cold weather. We had an extremely cool season all the way through, an unusually cool season I must say, so that the flora this year did not produce the nectar that it should. Still, I understand that in most parts of the State the bees were in pretty good condition. There was enough nectar in the fall to give us good broods, so that there are strong young bees and they are pretty well filled up, so that even if we did not get a good crop, this is encouraging, and I see there is lots of wild clover left. Not as vigorous as we would like it, still it is promising and if we have snows, as we ought to have after such a dry year, I think probably we will pull through and we may have a very good crop next spring, especially if we have timely rains, and so on.

As to the foul brood situation, I understand it is waning all along, large areas of the State are being cleared out and good work is being done, and I hope to see it continue. If there is anything that we ought to do, it is to stamp out foul brood entirely out of the State, and I believe that if the Legislature is liberal, it can be done.

There is another thing we want to be very careful about and that is to see that we have the right man for inspector. There was a change spoken of this spring and I was consulted about it, and the party that they wanted to appoint was not the man at all that we wanted. We have to be very careful that we do not get a politician into that office who is not a bee-keeper and who will not do what ought to be done to protect the bees against the spread of this disease. We want to keep our eyes on the Legislature and on the legislators and in the question of the necessity of having a good reliable man, we want one who will be all over the State to see that our interests are protected. If they know what we need, they will be apt to give it to us. Gov. Lowden has been very liberal and he

has been very watchful, too, and whenever he has been informed of the incompetence of anybody, he has refused to appoint.

I want to see this society progress. I am glad to see the number of members present this morning; I should like to have seen four or five times as many. I do not see why we could not have had two or three hundred at these meetings. I know it would be to the advantage of every one that attends. The bee-keeping industry is not receding, it is progressing and it should progress at a more rapid rate during these times of high prices than it has at any other time. Certainly I do not know what calling it is where a person could make as much money as out of bee-keeping with as little capital. There is no other calling that I know of and I have been in other lines enough and I have investigated long enough to state that as a positive fact. It seems strange to me that our State University has not put a course of practical bee-keeping into the Agricultural Department of the University. I think if the calling was brought to the attention of the young men who are at school over there and they were shown the possibilities of what is to be made out of it, especially as a beginning vocation, that there would be a great many more that would engage in it. The bee-keeper is not a selfish man, really like the horticulturist. They belong to the same class, they are very liberal people. I have never met a bee-keeper yet, nor a horticulturist, I might say, but what was willing to teach the secrets of their calling to others so that they could profit by them. This is not like some other lines of business and surely we are already large enough and broad enough to consume everything that we can produce. At the present time there is a call for thousands upon thousands, yes, hundreds of thousands of pounds of honey to be used over in the trenches. They are using lots of it, but they cannot begin to get what they need and there is no food, as my predecessor just said, so proper under those circumstances, with the hard trials that they have to endure. Honey is a health food and it is a food which creates energy, that is what they need. I should like to see the calling greatly increased and more interest taken in it.

Probably there will be some other points that you may bring up as we progress with our work. I may wish to call your attention to several things that ought to be done, but just now I do not recall them. I thank you very much.

(Mr. Baxter then resumed the chair.)

The President—The next number will be the reading of the minutes of the last meeting, or such portions as may give us some knowledge of what was done, committees appointed, etc. Have you a condensed report?

The Secretary—Yes, it is very condensed.

Dr. Baxter—Move that we dispense with the reading of the minutes of the last meeting. They have been printed, all the members have read them; why read them again? (Motion seconded and passed.)

The Secretary—The Auditing Committee was Dadant, Pyles and King. The Resolutions Committee: Dadant, Coppin and Kildow. Committee on Obituary for Col. Mills: Dadant, Prather and Stone. Committee on Reference to State Superintendent of Schools—that was for putting the Bee-Keepers' avocation before the public schools—that committee was King, Dr. Baxter and Withrow. Committee on Buildings—that pertained to the building that we were seeking for at the Fair—Dr. Baxter, Kildow and Coppin. Committees on Premiums: Dr. Baxter, Stone, and E. J. Baxter. Committee on Exhibit: Dr. Baxter, Williams, Kildow and Pyles. Committee to act on medals for display at our meeting was Dadant, Dr. Baxter, Newburn and Stone.

Membership of the Illinois State Bee-Keepers' Association, 1917:

To the State Association direct.....	196
Through the Chicago-Northwestern..	34
Through the Northern Illinois.....	11
Members received at the State Fair for 1918.....	73
Not counted in the above list:	
The actual membership at this date is	314

The cloth bound copies of our report ran so short that we gave out the paper bound at the Fair, and came near running out of them.

With this kind of showing we will be compelled to increase the number of our reports for next year.

The President—I think we may just as well have the Secretary's financial report and also the Treasurer's financial report and then I will appoint the committees, and they will have a chance to work.

The Secretary—Our report was cut very short this year, because of our fund being kept back by the State, we did not have it turned over to our Treasurer and all the funds in the Treasurer's hands will be the fund that comes through our membership fee. Up to July 1,—this is the report that went the old way through our treasury and after July 1, then our accounts are sent in through the Auditor:

1916			
Nov.	4	Badges, typewriter ribbon, gum paper, etc.	$ 1.36
Nov.	8	1,000 postals and printed programs, this includes the 1 cent stamp postal	14.50
Nov.	27	1,000 postals and printing for receipt notices	12.50
Dec.	5	500 No. 6 envelopes and printing on same	3.00
Dec.	5	1,000 membership blanks, printing on two sides	11.00
Dec.	5	Group pictures	2.00
Dec.	5	Gum paper	.25
Dec.	5	Postal Guide	.15
1917			
Jan.	16	600 letterheads, President, Vice President and Secretary	9.40
Mar.	20	Ink, stationery and paste	2.25
Apr.	14	250 manilla envelopes sending out report	4.00
Apr.	27	200 5 cent, 200 2 cent, 200 1 cent stamps, sending out reports	16.00
			$76.40

Next year our postage will be a whole lot higher than this. We will even have to pay 2 cents for every receipt card. Last year 1 cent. We tried to send them out and were ruled out by the postal authorities.

You will notice this includes items previous to July 1, 1916. November 16, by Dr. Baxter, amount returned from exhibits, $1.25, after July 1, account, but through the State Auditor.

The President—You have heard the report, what will you do with it?

A motion by Dr. Baxter that the report be referred to the proper committee, was seconded and carried.

The President—Now we will have the Treasurer's report.

The President—I will appoint on the Auditing Committee, Mr. King, Mr. Coppin and Mr. Bowen. They will investigate these reports and report as soon as possible. Dr. Baxter, I appoint you as a special committee on the Question Box, to receive questions and propound them to the meeting.

Dr. Baxter—Ladies and gentlemen, every opportunity that we have, every minute that we have to spare, we will have questions proposed to which you want answers, and the members who have had experience in that line will be glad to give you all the answer they can, so if you have anything that you want to know about bee-keeping, write out your questions and hand them to the committee. Do not be afraid to ask just as many questions as you can, if we have time to answer them, we will do the best we can.

The President—We will have a short recess now and we will receive memberships and the Secretary will issue badges to the members. We may take up some business later on, before dinner.

CHAS. BECKER, Treasurer.

TREASURER'S REPORT TO THE ILLINOIS STATE BEE-KEEPERS' ASSOCIATION.

CHAS. BECKER, *Treasurer*, Pleasant Plains, Ill.

Disbursements.

1916	Voucher.			
Nov. 10	No. 57	Emil J. Baxter	$ 18.12	
Nov. 16	No. 58	E. R. Root	32.96	
Nov. 16	No. 59	C. P. Dadant	8.54	
Nov. 16	No. 59	L. E. Pyles	6.65	
Nov. 16	No. 60	Lilian M. Stewart	10.00	
Nov. 16	No. 61	Dr. A. C. Baxter	1.25	
Nov. 16	No. 62	Rev. Chas. W. Ross	5.00	
Nov. 20	No. 63	Dr. A. C. Baxter, prize essay	5.00	
Nov. 20	No. 64	C. P. Dadant, second prize essay	4.00	
Nov. 20	No. 65	Chas. Becker, postage	.90	
Dec. 18	No. 66	E. J. Baxter, State meeting	9.54	
1917				
Jan. 27	No. 67	Lillian M. Stewart, report	86.50	
Feb. 1	No. 68	John C. Bull, stationery and stamps	14.82	
Mar. 17	No. 69	Lilian M. Stewart, Chicago report	86.00	
May 29	No. 70	Illinois State Register, printing	414.22	
May 29	No. 71	Jas. A. Stone, compiling report	50.00	
July 16	No. 72	Dr. A. C. Baxter	4.00	
Nov. 1	No. 73	Jas. A. Stone postage and stationery	75.16	
Nov. 1	No. 2	Jas. A. Stone, salary	100.00	
			$832.66	$932.66
Cash on hand in State fund, November 15, 1916			$1,176.71	$1,176.71
Disbursements of State fund			832.66	932.66
Balance in treasury of State fund			$344.05	$244.05
Cash on hand in the Association fund, Nov. 15, 1916			$201.44	
Received from Jas. A. Stone, Nov. 7, 1917, by check			113.50	
Total			$314.94	
Paid Jas. A. Stone, Nov. 1, 1917			100.00	
Balance on hand in Association fund, Nov. 14, 1917			$214.94	$214.94
Balance on hand in State fund, Nov. 14, 1917			344.05	244.05
Total amount in treasury, Nov. 14, 1917			$558.99	$458.99

We the Auditing Committee find in the Treasurer's report against himself an error of $100.00 to which we make corrections.

HARRY L. KING,
AARON COPPIN
J. W. BOWEN.

RECESS.

After recess the meeting was called to order by the President.

The Secretary stated that he had in his possession a letter enclosing a fee with no name to show who had sent it, postmarked "Cornland," and he asked that anyone possessing information regarding the writer communicate with him.

QUESTION BOX.

Question—Is it too late to re-queen?

Dr. Baxter—I suppose he means at this time.

The President—Who has had experience along that line, who will answer that question?

Mr Kildow—It is too late for me.

Mr. Dadant—If you wanted to put the queen into a colony that was either queenless, or had a worthless queen, I believe it could be done on a warm day.

Mr. Pellett—My experience has been that it has been difficult to get a queen accepted after all activity stops in the fall. The percentage of loss is extremely large. I have tried it out in a limited way, after the normal activity of the colony has ceased in the fall and the loss is so great that it makes it rather desirable to wait until spring.

Mr. Dadant—My reason for saying that it might be done is that we unite colonies at this time of the year and if we kill one of the two queens, they usually unite fairly well and accept the other queen. That is why I thought it might be done. Of course I would want it done by quick introduction. I would not want to introduce the slow way, the 48 hour way, releasing the queen with candy or honey.

Question—What is the best plan to use in uniting the nuclei?

Mr. Kildow—That would depend upon the conditions. If you have a good honey flow, they will hold together almost any old way, but you have to use a great deal of caution, especially using a newspaper between the two. It is a good way, but if there is a good honey flow, you can put them together almost any way and they will stay.

Mr. Pellett—The newspaper plan would not work late in the season.

Mr. Kildow—I do not know about that. I just finished up one last week with the newspaper.

The President—I frequently unite colonies, that is weak colonies, and I never use a newspaper or anything else. I just take the combs out of one hive of bees and I put them in another, but I do that very late in the season, just at this time when they are kind of dull and do not fly. I never had any trouble at all.

Mr. Kildow—I think one thing ought to be taken into consideration as to the man that is handling them. A man handling bees who has had experience, can handle them when another man that has not had any experience cannot do it. It makes all the difference in the world who it is, the time of the year and everything. It is pretty hard to lay down a hard and fast rule.

The President—Yes, I agree with you there.

Question—Is it safe to use sections and foundation supers from American foulbrood colonies?

A Member—I should say no.

Mr. Heinzel—I would not be afraid of putting them in while the honey flow was on.

Dr. Baxter—I still think, for the average man I should say no.

Mr. Pellett—I certainly would not use them in another apiary where there had been no diease, but if it was in an apiary where the disease was present and there was no particular danger of spreading the disease, I certainly would not throw away any supers that I had, I would use them in the same apiary, because there is very little danger of spreading American foulbrood excepting through the honey. Yet, I am like Dr. Baxter, I would not take any chances on taking any kind of equipment from an apiary that had disease to one that was free from disease.

Mr. Kildow—I do not think there would be a particle of danger if the foundation had not been drawn out or honey put in the comb, but with the comb drawn out, honey deposited in it, it would be suspicious. If the foundations had never been drawn out, I do not believe there is a particle of danger.

The Secretary—Then, Mr President, it would be safe, if there had never been any honey there, to say that it was all right.

The President—Yes, if the combs had not been drawn out and used it would be all right.

Question—What has been done with bees in combless packages?

The President—Who has had experience along that line?

Mr. Heinzel—I have had a lot shipped through from the South; they arrived in very bad shape.

The President—Has any one else had experience?

Rev. Warber—I have had two colonies come that way and they came all right, but within about ten days after that I had to double them up with others.

Mr. Pellett—I have had an opportunity to observe the package business quite extensively during the last two years, although I have not had any practical experience with it personally. In Canada last year I visited a number of extensive honey producers who shipped north packages from the extreme southern part of Alabama and some of these packages had been held up at the point of entry and even though there was delay on account of the customs, still some bee-keepers reported that they had been able to build up single pounds in the season and produce as much as 60 pounds of surplus. Of course that was the most favorable report that I found.

The President—Compared to how much by the home colonies?

Mr. Pellett—I do not know just what their returns were, I do not recall about that, but most reports were that a single pound of bees was not enough, that you should have at least two pounds and better three pounds in order to make a colony, if you expect to get surplus at the end of the season. There have been reports of loss in shipments, but there seems to be a great difference in this respect from differenct dealers from time to time, as given to the American Bee Journal. Last spring I visited nearly all the pound package dealers in Georgia, Alabama and Mississippi. I noticed a great difference in their method of preparation. The dealers who were feeding from the top of the package were having no trouble at all, the bees were coming through all right. The fellows who put the candy at the end of the package, so that the bees had to break the cluster, were having a little trouble. When we stop to think of it, it is a simple explanation. You know bees always cluster about their stores and to bore a hole at the end of the stores, clear away from the cluster, and put the candy there, makes an unnatural condition, and the bees have difficulty in getting their stores in transit, while, where the candy is placed directly over the cluster, the bees can cluster in a natural way and get their honey with a minimum of exercise, and I think that one thing alone explains a great deal of the difficulty in getting all the packages through.

Of course, there are a good many conditions that neither the shipper nor the producer has any control over. You cannot insure careful handling on the part of express companies, but the reports from those who have tried the matter extensively are very much in favor of the pound package. The men who started in two or three years ago, and bought two or three packages in experiments, increased the number, I think this year they increased the numbers enough to start a whole apiary. Of course it has been an unfavorable season this spring, but the results of those who tried it out last spring extensively were quite favorable.

Rev. Warber—I had a pound from Alabama last spring billed on the 15th of May, which was not delivered until the 15th of June. The one pound of bees not only filled the eight frames of the hives, but also produced several pounds of surplus honey, although the white clover season was practically a failure the past season and only the fall season was good.

Mr. Erbaugh—Will you state whether you had the colony ready for the clover?

Mr. Warber—I got it about the beginning or the middle of June.

Mr. Erbaugh—How long did it take to get ready?

Mr. Warner—Till the fall.

Mr. Erbaugh—The general impression among up-to-date bee-keepers is that it is pretty hard in the spring of the year to get a combless package ready for the honey flow, that is, the white clover flow, if you only get a pound of bees, but if you get two and a half or three pounds, the bee-keepers of Northern Michigan are of the opinion that they can have that colony ready in just as good a condition as an old colony. That is the impression among quite a few good bee-keepers. They are actually considering that as the method of increase and some are considering doing away entirely with wintering colonies. Of course we question the wisdom of the procedure, but if you get two and a half pounds and they arrive reasonaly early, you can have them in good condition for the white clover flow.

The President—This is a very important question, because if some of us want to increase our apiaries it would be a sure way of doing it. If you want to buy colonies you cannot do it so well, you have to go a long distance to get them. It is an important question, and we will bring it up later on, when other members come who have had experience in that line.

As Mr. Erbaugh just mentioned, I believe if you get them early enough, in the right locality where there is plenty of fruit bloom, it will be easy enough to build them up for the white clover crop, but getting them as late as this gentleman

did, the middle of June, in that latitude, the latitude of Belleville, the white clover crop is pretty well along, if not pretty nearly over.

Mr. Pellett—One thing more should be mentioned, and that is that packages without queens almost invariably come through in bad condition. One shipper told me in the South that he expected to discontinue furnishing them without the queen, they were so restless. He showed me bees that had been caged only a short time, even bees that had been prepared within an hour for shipment, those with queens were all perfectly quiet and fairly contented, while those without queens were roaring and restless and were tearing around that box in an effort to escape. When they continue in that condition for three or four days, you can naturally see that they will arrive in bad condition. From what I saw last spring I certainly would not order any package of bees without queens and expect to get them in condition to produce.

Mr. Erbaugh—That is the way the colonies behaved that I had under my observation, with queens and without queens. With queens they seemed very satisfactory.

The President—I have had no experience along that line, but I think it would be foolish to order bees without queens, because I would have to order queens separately. Certainly at that stage you could not raise queens.

Mr. Warber—I ordered the queen with the bees.

Mr. Kildow—A year ago this last May I bought ten two-pound packages from Louisiana and put them on full drawn combs. That makes all the difference in the world, whether you put them on foundations, or on drawn combs. I want the queen inside of the cage where the bees can get all around the cage and get acquainted with her. Then you will have no trouble about the bees killing the queens, because the majority of the queens are strangers to the bees and must get acquainted some way.

Mr. Pellett—I would have them released in the package before they are shipped.

Mr. Kildow—She comes to strange bees then.

Mr. Pellett—The most successful shippers I know, that is, the ones that are following that method, are getting the largest percentage of satisfactory results from the queen inside the cage of bees, I have had part of my colonies swarm the latter part of June and I got on the average almost two supers per colony. I got an exceptionally good shipment, that is, they seemed to come through in the finest kind of shape.

Mr. Warber—I ordered the queen with the bees, but the season down South was so backward that the bees failed to arrive, or the white clover season and the bees arrived at the same time, so that there was no chance to get ready only for fall.

The President—We will pass this question now.

The Secretary—Mr. President, before another question is put, I should like to say that if any are here who paid their fees at the Fair, do not be backward about coming up and getting your badges. You are entitled to them just the same as the members who paid here to-day and you are a member through 1918. I move that the editors of the three Bee Journals, American Bee Journal, Domestic Bee-Keeper and Gleanings in Bee Culture, and also Dr. Miller and Dr. Phillips, be made honorary life members of this Association.

The motion was seconded by Mr. Troutmer and carried unanimously.

Mr. Dadant—I am the only one of the parties named present here and I want to thank the meeting for this kindness. It makes one feel very kindly and very proud to be elected an honorary member of this Association. Last year Michigan gave us that honor and I felt very proud, especially in the company of Dr. Miller, who is 20 years my senior and certainly has had more experience than I have had.

Dr. Baxter—Mr. President, the Illinois State Bee-Keepers' Association by law is required to have a seal and they have never fulfilled or obeyed the law and have never had a seal made; so the Exhibition Committee in getting up a certificate for the people who so generously brought honey, had to have a seal made for the certificate and I have asked an artist to make a seal and he presents this. (Exhibiting drawing.) The artist is not a bee-keeper. He had an issue of the American Bee Journal to get his design of the honeycomb, and I gave him the date of the charter, so this is a drawing of the seal. I shall leave it here for your examination and we will bring it up before the meeting as to whether it shall be adopted or not. Of course you will understand that when the seal is made it is not so large as that; it will be reduced to something like the size of a silver dollar and it will look slightly different. The honeycomb will look much better and will not look like foul brood.

The President—This will be placed on exhibition here and we will all examine it, and we will bring it up the first thing in the morning.

The Secretary—Was there anything said about the cost?

Dr. Baxter—That depends on what kind of a die we have. Your Committee on Premiums, of which Mr. Dadant is Chairman, and who will probably report after dinner, will tell you that if you exhibited honey, the man who won first, or second, would be given a certificate, and at the end of three years, if he won the first prize or the second prize three consecutive times, would be given a grand medal. I have a certificate here. It is not the plate, it is the artist's drawing and I wish you would look at that and pass your opinion upon it.

This certificate will be issued to every one that makes an exhibit in this line, of honey, and when they have three of these certificates, then they will hold a medal.

The President—We will now stand adjourned until half past one this afternoon.

AFTERNOON SESSION.

The meeting was called to order at 1:30 p. m. by the President.

Report of A. L. Kildow, State Inspector of Apiaries, Putnam, Ill.

SEVENTH ANNUAL REPORT, 1917.

Last year we inspected 419 apiaries containing 7,401 colonies and found 136 apiaries having disease.

This year we visited 644 apiaries containing 14,186 colonies and found only 124 apiaries diseased.

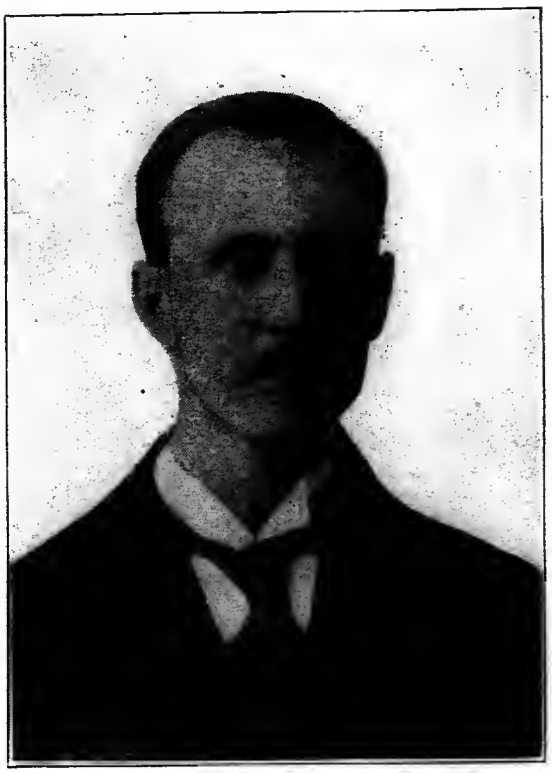
This shows that we visited 225 more apiaries containing 6,785 more colonies this year than last and found less disease.

Out of the 124 apiaries quarantined reports have been received from all but 6 that they have cleaned up.

The President—Did you say that you had additional information about the work of inspection that would be published in the proceedings, in addition to this?

Mr. Kildow—No, just this. That is all now. If there are any questions you want to ask I will try to answer them.

Mr. Bowen—I should like to ask the State Inspector how he knows whether they cleared those diseased apiaries. Do you take their report for it, or do you see that it is done, yourself?



A. L. KILDOW,

State Inspector of Apiaries.

Mr. Kildow—Part of the time I see it myself, and other times we have to take their word for it until we go there again. If they report they are clean, we do not bother with them unless we hear there is something wrong. If they report that they are clean there is no object in going again and spending money.

Mr. Bowen—It does not seem to me that that is sufficient proof.

Mr. Kildow—Then you will have to get the Legislature to appropriate about two or three times the amount of money we have. I have cut down $75 on this last appropriation. Now, if we are going to go to these yards time and again, back and forth, we have got to have more appropriation.

Mr. Bowen—Then I do not think the report ought to be that they are clear of disease unless you have some absolute knowledge of it, because I know of some that might have reported that they are clean and yet might not be clear of disease.

Mr. Kildow—That might be, but still I do not know how you can tell. After he tells you that they are clean, you cannot tell him that they are not unless you have pretty good evidence. We are supposed to

SEVENTH ANNUAL REPORT, 1917.

Date.	No. colonies.	No. apiaries visited.	No. apiaries diseased.	No. having A. F. B.	No. having E. F. B.	No. days.	Expense.	Supplies and incidental.	Per diem.	Remarks.
November, 1916 and February, 1917	.....	*	....	....	....	9	$13.92	$20.22	$ 36.00	By inspector.
November, 1916 and February, 1917	14	1	....	....	....	1	2.08	.....	4.00	By deputy.
March, 1917	.....	†	....	....	....	5	14.03	3.00	20.00	By inspector
March, 1917	.....	....	....	....	....	....	35.20	.....	.....	To Frank Higgins.
April, 1917	.....	‡	....	....	....	10	18.90	3.27	40.00	By inspector
May, 1917	213	7	3	2	1	12	25.22	.....	48.00	By inspector.
May, 1917	2,491	120	19	11	8	45½	56.72	.....	182.00	By deputies.
June, 1917	382	6	3	....	3	9	8.70	1.86	36.00	By inspector
June, 1917	3,096	145	26	14	12	53½	81.69	.....	214.00	By deputies.
July, 1917	228	11	....	....	....	14	24.39	1.25	56.00	By inspector
July, 1917	2,280	135	26	13	13	50½	81.88	.....	202.00	By deputies.
August, 1917	2,463	48	17	13	4	25	66.14	4.50	100.00	By inspector.
August, 1917	2,719	150	21	8	13	47	89.02	.....	188.00	By deputies.
September, 1917	.....	§	....	....	....	13	17.53	1.00	52.00	By inspector.
September, 1917	300	21	9	7	2	15	14.77	.....	60.00	By deputies.
Total	14,186	644	124	68	56	309½	$514.99	$70.35	$1,238.00	
Grand total	.....	....	....	....	....	....	.....	.....	$1,823.34	

* Convention work.
† Convention at Mt. Carmel.
‡ To instruct deputies.
§ Instruction work at State Fair.

instruct him so that he can tell the next time the disease comes to his yard and he is supposed to work along that line and clean up. We cannot be with him all the time, or in his yard. He must learn the thing himself or quit the business.

Mr. Bowen—Some times bee men are more conscientious than other people and more careful and yet, while I hate to intimate it, sometimes the thing needs watching and I think it is the inspector's business to watch them.

Mr. Kildow—That is all right too, but we cannot go back. We have not money enough to go back very often. The inspector must use his judgment a great deal. If the man has the disease and he thinks there is a possibility of the man not doing right, the chances are that the inspector will go back there again and see that he has done it. But if he has confidence in the man, he will not go back unless he is quite sure that it is necessary.

Mr. Bowen—I know that we have had a deputy inspector with us and of course he did as well as he could, but unless he comes back he does not know that those parties have done the work as it should have been done.

Mr. Kildow—You have to take the man's word for it.

The President—Mr. Kildow, I am not satisfied with that kind of inspection and I do not approve of it all. I believe it is the duty of the State Inspector to use some means, either go himself, or his deputies, to be sure that those apiaries are cleaned up. Take it up at our place, if we had been dependent upon a report of that kind, we would have had thousands all over Hancock County. Instead of trying to clean up one man just went to work and did what he could to spread the disease as much as possible.

Mr. Kildow—All men are not like that.

The President—I would not take any man's word unless I knew that he is a man to be trusted. That is the way I look at it.

Mr. Kildow—There is only one of two things about it. If the Association, or if the State wants us to go back, all right and good, if they furnish us the money, but unless they furnish the money we cannot do it.

The President—That may be, but we will find some means. You can go into a locality and find foul brood and you can authorize the man to clean it up according to law and you can deputize or you can request some bee-keeper near by to see that it is done and report to you whether it has been done or not.

Mr. Kildow—No, I cannot deputize anybody.

The President—You do not have to deputize him, if you request him to do it he will do it, nine times out of ten.

The Secretary—he may be a man that we could not trust.

Mr. Kildow—I might request some man to go into your bee yard, some neighbor, and may be you will request him to get out.

The President—Then I am culpable, I have not done the work and it is the State Deputy Inspector's duty to come back and show that I am culpable.

Mr. Kildow—We are willing to come back when anybody wants us to, but if we come back any time or all times, whether there is anything there or not, we will soon use up our money, and the fellows that did want us to come back will have to wait until we get a new appropriation. Inspectors are willing to go anywhere, but they cannot go unless they have the money.

The President—Then would be a good time to go to the Legislature and say, "We need more money." We would have to prove to them that it was necessary to do it and we will get it.

Mr. Kildow—We have hardly enough money to run us until the last of July.

The President—That was on account of the Legislature passing bills not according to the law.

Mr. Kildow—We will use up our whole appropriation this time, the whole thing.

The President—Because you have been using some of this appropriation for last year's work.

Mr. Kildow—No, I started on this appropriation the first part of July. I did have a little left over from last year.

The Secretary—They will not allow this on the next year.

The President—Yes, they will.

The Secretary—If it is not used by the 1st of July it reverts back to the State.

Dr. Baxter—Money appropriated this year, if there is any over next July, goes back into the State funds.

The Secretary—It does not go back until the 30th of September.

Dr. Baxter—It does not make any difference, you cannot draw it, absolutely.

The President—That is according to a new law passed this last year.

The Secretary—It has to be drawn out.

The President—The appropriation is made for two years.

Dr. Baxter—It specifies how much per year.

Mr. Kildow—They changed things considerably. If we had not been very careful with our money we would not have had enough to pay for what we did.

Mr. Dadant—This matter of the destruction of foul brood is so new that we are like a lot of children, we do not know how to get at it. We have a little bit of money to do a great big work. We have a State that is 500 miles from north to south and 250 to 300 miles across. We have 102 counties and we have, how many deputies?

Mr. Kildow—I used 12 a little while, 7 deputies did most of the work.

Mr. Dadant—Twelve deputies, that makes about nine counties for each deputy. Well, you all know how much time it will take to go through nine counties to make sure of everything. Until we have more money we will have to depend a great deal on education and I believe the inspector is doing the best he can with the money, making it go as far as he can. I have had letters from parties wanting to know if we had any inspector and if we did, why he didn't come around. Well, if the inspector was to find every bee-keeper, go to him, there would have to be about 50 of him. After he has given instructions and shown the people the dangers, explained everything to them, it seems to me that until we are better fixed we ought to rely on them to clean it. However, if there are people in the vicinity of a diseased apiary who are more interested in it, it would be a good thing to inform them, and if they are not acting as deputies, they can at least see whether the disease has been cured or not, whether the man is careful or careless.

Our President has called attention to the fact that neighbors might be interested. In our neighborhood there was one man who exposed foul brood that had been among his bees, near Mr. Baxter's apiary, although they did not catch the disease, they were in great risk. However, we were watching the matter carefully. I hope every bee-keeper who is present will advise his neighbors and only in extreme need send for the inspector, because education has a great deal more to do than compulsion. Any man who has bees, if he has any sense at all, is interested in destroying the disease. It is only if he is doing it for spite, if he is keeping bees just simply to injure his neighbors, that he may do harm, and I take it there are very few such men in the country. So that after all, if we are willing and do not criticize too much and are active ourselves and notify the inspector whenever there is disease, perhaps until we get a larger appropriation we can get along. At any rate, we can decrease the disease. We are decreasing it individually, but we are far from the end. But it is a beginning and it is only a few years back when there was no inspection, no State aid. The man who

had it took good care to hide it and say nothing about it and they were trying more or less safe means to put it out, in many cases spreading it without knowing it. I think we are on the right road and we should keep on, and any of us, who are informed, tell the others and then call the inspector when we see that it can not be helped.

Mr. Root—I want to endorse what Mr. Dadant said. We had the same thing in our state and our law specifies that the inspector shall go back inside of ten days after making inspection. We found that impracticable. We could not do it. We had so many people in the state that we could not cover it. It was all they could do to cover a large part of the state once. If we could do it once we were doing well and we decided that the inspector would go once and depend on the men, and we depended on the judgment of the inspector as to whether Mr. A or Mr. B had cleaned up his bees. In our particular county the inspector relies largely upon our statements. He comes around and inspects the bees, I want him to do it, I want him to look through all our bees. Then he comes back and tells me certain ones in a part of the county have become diseased. We make it our business to have men call on those people, whoever they may be, and see that the matter is attended to, then we report to the state. That can be done provided you have asked the authority of the state. I want to emphasize that education will do more good than compulsion. If you can get your inspector around once a year, it is better to have him cover a part of the state and after he has been around once, rely on the men.

I want to congratulate you on your showing, that is better than a great many other states. If you are getting rid of foul brood under your present plan, it seems to me that you are doing well under your appropriation.

Mr. Kildow—A law expecting the inspector to come back in ten days does not amount to very much.

Mr. Root—It is too soon.

Mr. Kildow—You have to consider who the man is and use your judgment on the conditions you find.

The President—I insist on what I said before. It is better to have some third party verify the owner's statement that his bees are clean. In a locality, you will find some bee-keeper that is interested enough to go in and inspect and report.

Mr. Kildow—It is pretty hard to get a man to go into his neighbor's yard.

The President—Take our case. If we had not done it what would have been the result? One of our friends in this State says foul brood is a blessing in disguise because it compels us to keep our apiaries clean.

Mr. Dadant—You are speaking of cases where they all know their neighbors. It is easy enough when we know them all, we can inspect our neighbors' yards and advise and suggest and report to the inspector, but where somebody else calls you up to inspect his bees, that is not altogether satisfactory. Even if they are inspected, we know that there is a possibility of the disease returning, because not all the bees in the county have been inspected and while you are curing in one place it may be in another, so that a great deal of it has to be left to circumstances and I think what we want to do is, not so much to criticize our inspector as to encourage him and give him all the help that we can. I think if any of us would ask him to come back because there was a serious case in the neighborhood, and he refused to do it, we would have a right to compel him, but to ask him to come back where he has been once and the man has agreed to treat the apiaries, I think until we have more money, it would be a mistake for him to do it. If he knows a person who can watch and who is reliable and not likely to anger the man who has the bees, well and good. But in how many cases does he go to a part of the State where he knows nobody except the man he calls upon who is complaining? I think we must look at that matter from all sides.

The President—Well, ladies and gentlemen, I do not want to be understood as criticizing our State Bee Inspector. On the contrary, I am making suggestions. I know if I was a State Bee Inspector I would not be satisfied with the report of the man whose apiary I went to investigate unless I knew him personally and I believe I would find some means of informing myself without depending upon him entirely, at very little cost. Then I would know what I am about. Mr. Kildow is not sure. He cannot go on the stand and swear that that apiary has been cleaned up, whilst if we had the evidence of two or three persons, it would be much better. I believe in being as thorough as possible in this inspection work. It is the only way to rid the State of foul brood. That is what we have the appropriation for.

Mr. Kildow—At the same time, you could not tell if you went back in a month

whether it was there or not. You cannot tell when it is going to break out.

The President—Not in a year even.

A Member—That was what I was going to say. You cannot rely on the inspector's word any more than the bee-keeper's, because he would not know himself. He could not swear positively that the disease is cleaned up. I got a wire from a bee-keeper some time ago that he had treated his bees for foul brood and the inspector had been there after and inspected the bees and stated that they were all right, but he said, "I have to transfer them again."

The President—It depends upon whether it is European foul brood or American foul brood?

A Member—They treated it for what it was, for American foul brood and he transferred them and the inspector reported, "All right." He thought it was all right himself. So it is difficult to tell whether it is cleaned up.

Mr. Kildow—The inspectors have rather a hard row to hoe. If you get into the business once yourself, you will probably see it. You might visit a yard two or three times a year maybe in the fall, say in September, foul brood might break out there and then they give this inspector Jesse because he did not attend to his business. You have got to use your judgment the best you can and trust to luck.

The Secretary—I do not think there are any two sides to this question You have either got to increase the appropriation or stop. Whenever you try to get one neighbor to go to another neighbor to see whether he has cleaned up, he is going to say, "Who are you to judge over me?" It would not do at all in any neighborhood that I ever saw. And when any foul brood comes into a neighborhood—just to illustrate—some of the neighbors started a story that *this* young man was called on to go to our cellar to see how much fruit we had on hand. The neighbor said, "Well, he don't dare to come to my cellar." They would not trust him in their cellar and I guess that was just a farce, I do not suppose it was ever authorized by the Government, but it just shows how people think of any one that has received any appointment whatever. They want to know the source from which the appointment came and then they are not satisfied. If it is a neighbor, they want to know how he learned so much more than they know. They think they know just as much as he does and nine times out of ten they are right. I do not believe it will work. You want to increase the appropriation or keep still.

The President—People may not be the same all over, but in our neighborhood a number of bee-keepers requested Mr. Kildow to come over and see if they had any foul brood and I think if a man is sincere in wanting to clean up foul brood, I think he will be glad to have his neighbor, whether he knows anything or not, come in and inspect his bees, because two heads are better than one.

Mr. Bowen—I should like to ask Mr. Kildow if he personally superintends the treatment of the apiary he goes to?

Mr. Kildow—Sometimes we treat a colony, other times we give them the instructions.

Mr. Bowen—That is the important part of it. Very often they do not know anything about the business, do not know how to attend to it themselves. In many cases, where they only have a few bees, they do not care how the neighborhood suffers, they do not care to go to the expense themselves of cleaning up the foul brood and I think the neighbors often would be glad to help them if they were authorized to do so. I know of a case, last summer, where another party and I went and helped a man to go through his bees, got them in good shape. Another party in the same place, I do not believe he would have allowed us on the place if we wanted to go in. That is what we have to contend with. Yet the other party had the disease worse than the party that we helped.

The President—In that case I would send the inspector out there.

Mr. Kildow—I cannot authorize anybody to go in as deputy. I have no power at all. If the parties will allow a neighbor to come in and talk to him, explain to him, all well and good. It is none of my business. One trouble is, the bee-keeping neighbors do not mingle enough with each other and exchange ideas enough. They seem to be selfish, the small fellows think the other fellow wants to get a little the best of them. If they would be more social, we would get along lots better.

Mr. Bowen—One of the parties I had reference to said, "It is just a little job fixed up with the bee men to have the inspector come around and inspect bees. He simply wants a job."

The Secretary—Mr. Kildow, cannot you refer them to the treatment that we give in our report?

Mr. Kildow—We refer them to that, or we give them treatment.

The Secretary—If they have this where they can read it, will they not profit by it?

Mr. Kildow—Some of them will and some of them will not.

Mr. Williams—May I say a word here? I have not had very much experience, just a little bit along this line and I believe that the men who keep bees for profit as well as pleasure will bear me out in what I say. It is not from the men that keep bees for profit, nor from the men that keep bees for pleasure that we are in danger, it is from the fellow that has one or two hives accidentally, he got them from somebody or they came to his house. I did not do much inspection this summer but it seemed that foul brood was scattered by the bees that froze to death in the winter. That is, the man says they froze to death. He did not know what was the matter. All the bees of everybody else in the community had access to it and that man did not know that he was doing wrong, he was not intending to scatter that foul brood, because he did not know he had it. There is where our danger is. It is from the little fellows that have bees from the bee trees that are around over the forest, hundreds and thousands of them in this State that die through the winter, froze to death they will tell you, when most of them that I found were dead of the foul brood among them. Now, as Brother Stone said a minute ago, how can we get this State law to those fellows that do not know that there is such a law. They will not ask for it, and, as Brother Kildow said a minute ago, we have not appropriation enough to reach all those fellows. How long will it take to canvass this State and find every man that has one swarm of bees? They are the ones that we have to look after.

Mr. Dadant—Perhaps it would be advisable to touch a little on the question of deputies. The impression may be abroad that the inspector can appoint anybody he chooses. He used to be able to appoint a man that he would select. At present the State Civil Service Commission has put a limit to that. They have to give examination to a certain number of candidates, as deputy inspectors, and it is only among those that pass that the inspector can select his deputies. In one way this binds him up with those men who have knowledge without going any further than their examination to properly diagnose the disease. But the inspector has his hands tied. If there is no deputy in the neighborhood where he is required to go, then he must either send one from a distance, or go there himself. So we must not criticise him too much for not selecting men. He might select a man who had a great interest in the matter and ask him to look after it, and if he has sufficient diplomacy he will make friends with the party. It is very much as Brother Williams says, the man who is the owner of one or two stands of bees is the one who transmits the disease.

I think we can illustrate the same point in orchard growing. You and I and some others who have only half a dozen apple trees, peach trees and pear trees, will leave our trees unsprayed and we cultivate codling moth and San Jose scale and the little curculio for the man who has a large orchard and who takes good care of his orchard; every year he has to spray because we careless fellows do not know any better than to leave our trees without spraying. It is exactly the same in the bee business. The man who has only one hive does not know anything about the foul brood, he does not know how to treat it and he is the man that we must look after, and it is for every one of us to try to educate those people. But the inspector's duty is to see the people, give instructions, and, if possible, enforce them. I think that under the present circumstances we must be satisfied with a sort of half measure, until we can get more thorough inspection by having more money and more inspectors. In California they have an inspector for each county, the same in Colorado, because in those countries the bees are so numerous that it is indispensable. It may come to that in Illinois, it ought to come to it.

Mr. Bennett—I know personally three or four men who have kept bees from twenty to sixty years. One has kept bees for sixty years and has the worst kind of cases of American foul brood, and he will tell you that he never had a case of foul brood in his life. I really do not think that these men read very much about bees. They are good, shrewd farmers, very smart men, but they concentrate their minds on their farm and their business and this bee business is a side line, and they just keep the bees. They have always kept them and they will keep them until they are dead I guess, and that is all there is to it. If everybody knew the business, what would be the use of any inspection?

The Secretary—The bee-keepers are unfortunate in not being advertised as much as they ought to be. If every man knew where to find the inspector, there would be a much better possibility of everybody knowing what the disease is. About two or three weeks ago a man came to my

house to buy some honey. They saw our notice on a pecan tree, out in the avenue, and after a very short introduction he said, "It is your fault that I lost all my bees with foulbrood." I said, "Well, how is that? I did not know I was to blame for anybody losing their bees.' "Well," he said, "I came to your house to find out what to do for my bees when they had foul brood and you were down at the Chautauqua." So it was my fault that he lost his bees. They all died of foul brood just because he was ignorant of where to find an inspector, or he did not have our report to know what to do. But we are unfortunate in not having ourselves advertised as much as we ought. We are less known than any other profession or business in the world.

Mr. Pellett—I was so extremely unfortunate as to be responsible for the inspection work in Iowa for a period of five years and I quite agree with these gentlemen who said that it is largely a matter of education. I think the inspector was the principal man who was educated during that five years. I think I received more education in that time than any man who had not been similarly engaged ever received in a similar period. At the end of the five years I decided that we had put the cart before the horse and that we began at the wrong end of the row.

I have had some pretty interesting experiences and some very trying ones in dealing with foul brood. The very first difficulty we ran up against is that less than 5 per cent of the people who are bee owners know anything about even the most fundamental principles of bee-keeping. I was called on one occasion to visit some bees at the home of a farmer. He was an extremely successful man, a good business man and a very successful farmer. He had some bees, but he took less interest in the bees than anything else on the farm. When I opened the brood case the man was utterly astonished. Why, he never had occasion to pull the frames out and go into that part of the hive at all. I remember on one occasion going to a place where I was told that the disease was bad. I enquired at the house and the lady said, "We have some bees, but they are all dead." I said, "Are the hives still here?" She said, "They are out under the apple tree." I went out and pulled out the frames and they were nearly filled with honey, but the combs were literally full of dead larvae of American foul brood. This was early in the spring and very fortunately the bees in the locality had not yet found those hives. I went to the man and explained fully the situation and told him what to be done. He said, "Oh, I don't care anything about them." I don't care if you burn the whole outfit." Our law was so drawn that the inspector could only do certain things at a certain time, so I explained to the man that in case he decided that he wanted to keep those hives, that he must destroy utterly all the contents of those frames and then, in order to make sure, he must scorch out the hives if he wanted to use them again. He said, "Well, I will burn up the whole business," but he did not want me to do it. He did not want to do it at that time, he was busy planting corn, I think. I did not have opportunity to go back again myself, but I sent a neighbor who very kindly agreed to do it, to make sure the recommendations were carried out and he went back the next day and he found that the man had done as he agreed in part. He had very carefully scorched out that hive, cleaned it top and bottom, and the whole business, the foul brood and honey, was piled in a pile in the middle of the alley, where it was ten times more liable to be found than in the hive.

I do not care how many bulletins you give a man, you can talk until you are black in the face and go off and leave him to do it, and he will make a mess of it. Education is what you have to have.

In Canada, after fifteen years of trying to get along with the old plans, they have gone about holding apiary demonstrations. They started this two years ago. Whenever a man writes, "We have foul brood, come down," we go down and if we find he has foulbrood, we say, "All right, Mr. Jones, we will come back next Saturday bright and early, and we will spend the day in the apiary and it is your business to get every man within 25 miles to come and we will have an apiary demonstration. You go home to your office and tell every bee-keeper in the neighborhood and send notices to those that you cannot reach otherwise, that the demonstrator will come in at such and such a time. They have had on an average about 35 bee-keepers come in. Then the inspector goes through the hives and shows every man present the condition of the colony, shows every man the incipient stage and the advanced stage and then some man present treats each colony as they come to it and when that demonstration is over, there are 35 men who can go out with an intelligent knowledge of how to treat that disease. I am satisfied that if during the five years I was inspector in Iowa we had done that,

we would have had ten times the result to show that we had. When I was making my final report to the Government, I made a recommendation that the law be changed. If they can give a man an intelligent idea of what the disease is, then the inspector can come back with the hope of cleaning it up, but you have to have more than three or four thousand dollars in a State like Illinois, or you would get nowhere in a thousand years.

Mr. Kildow—The argument is perfectly good, the trouble is, we cannot get the parties to come to these bee meetings. We tried this same thing of holding meetings over this State and it was absolutely impossible to get them. They promised to come, "Yes, we will be there on that day." We would come there that day and they were not there. You cannot force them to come to the meetings. You can get some people interested and teach them someting, but the ones that you need to teach most are the ones that hang back in the harness and you cannot force them. They know they ought to be there, too, and yet they will not come.

Mr. Dadant—There is one satisfaction, I don't know whether we ought to call it satisfaction, but there is an ending to this that to a certain extent is satisfactory to the practical bee-keeper. The fellow who will not come, the fellow who will not do anything, does not know how to do anything, sooner or later will be cleaned out of the business. I can give you one instance. A man near us had 75 colonies of bees, we warned him over and over, but never thought of going to see his bees, because we were sure he knew and would not do it. At the end of three years he complained his bees were dying. Our boys went to look at the apiary and they bought the 75 colonies for $40.

Mr. Pellett—They paid too much.

Mr. Dadant—No, because they wanted to have them out of the way, they wanted to clean them out. They paid $40 for the 75 colonies, hives and all, and they cleaned them out. That is what is coming to the man who will not work. Sooner or later the fellow who takes care of his bees is going to be on top and the other fellow will be down and out.

The President—Well, this question has been pretty well thrashed out and I believe in Mr. Pellett's idea of education.

Mr. Pellett—It will have to be combined with the other.

The President—The two have to go hand in hand. As far as the powers of the inspector are concerned, the law is very plain. The Civil Service Law was enacted long before our foul brood law, and our foul brood law gives the inspector the special right of appointing deputies in any locality where he sees fit, where he needs help, and I believe that that will stand under the law and, if I have been correctly informed, the inspectors of nuseries are not tied down by the Civil Service Commission and I do not see why the foul brood inspector should be. I have been attending these societies up and down in Illinois, Iowa and Missouri for the last forty years, horticultural meetings and bee-keepers meetings, and it is hard, very hard, to get a crowd. The very man that you want at these meetings is the man that stays away. The man who ought to have the the information is the man who does not come to receive it, and I do not know of anything which will reach him except this work that they have started within the last few years, that this young man is now representing here in Illinois. That is the only way to get results.

The Secretary—Do you know, Mr. President, that the State Horticultural Society is free to appoint their inspector?

The President—No, sir, Mr. Forbes is.

The Secretary—They are not liable to the board

The President—They are not liable to the civil service then, as I understand it. I have got Mr. Forbes' word for it.

Mr. Kildow—I do not think I have authority to appoint anybody outside of what the State gives me. I had a case where one of my old deputies was left out because up there in his locality they had possibly a little harder examination than he could pass. I did not suppose they had taken him off the list and I had some work for him to do in that part of the State and I sent him to go without notifying the State authorities that I wanted him, and without their sanctioning the appointment, so when I sent in his voucher they sent word back that he was not on the pay roll and I had to go to work and fix a whole lot of papers.

The President—Here is what the law says, that the Governor shall appoint a State Inspector of Apiaries, he shall hold his office for the term of two years and until his successor shall have appointed, to carry on the inspection under his supervision. That is plain enough.

Mr Kildow—When the civil service men come and tell you you have got to do something else what are you going to do?

The President—Tell him to show you authorities.

Mr. Kildow—I have to abide by what they tell me or get into trouble.

The President—Ladies and gentlemen, the next number on our program was "Better Bee-Keeping" by Hon. N. E. France, of Wisconsin, who is not with us. If Mr. Root will kindly consent to take up his time and give us a short talk, we will appreciate it very much.

Hon. N. E. FRANCE.

In my many visits among bee-keepers I learn of the poor returns from so many colonies of bees, and almost in sight of same are others keeping bees, modern methods and getting returns more than double per colony, I often ask who is making bee-keeping pay? Certainly not just bee-owners but bee-keepers in a true sense of the word. Allow me to illustrate as I find it in Wisconsin (of course none such in Illinois). One modern bee-keeper living on small farm which shows thrift, good buildings—pure bred stock, his milk record of each cow shows the profit, and his swine feeding on clean cement floors, each grade separated and frequently w ighed to know what certain feeds are doing, and a subscriber to Drovers Journal to keep posted on markets. Back in edge of orchard is small apiary with grass pastured down. Hives in straight rows and hives level on good stands. It is a pleasure to ask him questions for he knows. I ask do your bees bother you swarming during haying and harvest—he answers no—I control that. Do your bees finish sections with many combs bulging into next one, and others so thin as result as not to be marketable? He looks at me with surprise, and says, you can find plenty of that kind over there, pointing to neighbors apiary. I ask him do you every buy queens from reliable breeders—He answers me—Would you expect me to keep blooded stock and never buy new blood. I have no use for those black bees, even the best I can buy do not all come up to standard and I have to keep selecting. I ask him, do you have any system of management of your bees, and he says during winter months I review my methods, and lay out plans and dates for certain work to best advantage and so far as possible follow it. Of course during winter I get everything possible ready for coming season—hives cleaned and pinted—extracting combs scraped around frames—the poor ones go into wax, and all wax sent to be made up into comb foundation and in frames ready long before busy season. My storage for extracted honey is on hand—contracts for queens and packages of bees early in spring from the south before spring snows are gone. I ask do you keep a hive on the scales? He looks at me surprised and yes is his answer; and adds how would I know that cow over there has a record that beats any in the county, and would I know that if I did not have a record sheet. The same applies to the hive on scales, as I by that know what my bees are doing, and when to do my part.

I meet this man again at State Fair, and ask have you sold your honey? He answers, about half of it, but rest will be gone in time. What did you get for your honey, $3,200 when sold out is reply. What did your best colony produce this year? He answers 210 pounds extracted, and sold at 15 cents net or $31.50. Now brother bee-keepers of Illinois, this is a picture of actual conditions in one of Wisconsin's modern apiaries.

Let me describe modern bee-keeping as we see it over fence enclosing it. White bee-hives, all of same size and interchangable, between brood chamber and honey supers is a wood and wire queen excluder, and metal hive cover over each hive. It must be about close of honey season as each hive has several extracting supers, and in corner of apiary is the bee-house. Also notice this apiary is in the warm sunshine with shade boards on top of each cover and good windbreak on north and west sides. As we reach the bee-house we pass the wheelbarrow with high

dash at right agle with floor of barrow, so hive bodies will not slide forward while wheeling. The screened windows, have bee escapes so any bees from within easily return to apiary.

As the combs (all worker made from full sheets comb foundation) are full of honey and sealed, the supers are set by side of uncapping box which is right width to hold the combs after uncapping, and has screen bottom above real bottom of box by which the cappings can drain out the loose honey, and as it drains direct into the automatic strainer where all honey from extractor also goes, thus leaving all faucets open. No danger of run overs or waste, and needs to be cleaned but once in a season. Again notice almost every comb is built down to bottom bar, by placing them just above queen excluder in extracting supers.

A steam heated uncapping knife does much better work and far faster than any other knife or uncapping machine yet on market. (I have three kinds of uncapping machines—after testing each, have laid aside as relics.) The steam boiler has safety valve to avoid danger, also steam whistle that tells us when boiler is getting short or water.

The combs are extracted with a 6 frame reversible machine, turned by a 72 year old man, and several times has extracted more honey per hour than when same machine was turned with 3 horse power engine. That kind of power is always in running order and means much on busy days. All the honey from automatic strainer is stored a few days in large storage tanks, then drawn into 30 pound deep tin pails, and set in tank of hot water few moments, and when warmed is poured into empty extractor tank and at once drawn into new 5 gallon honey cans and cover screwed down. That honey kept in the bee-house (no stove in there to keep ro m warm) will not granulate before late spring, and has the heavy body, customers like. The flavor is not injured or lost, and all customers say "*tastes like more.*"

By having young queens in later summer, the hives in fall are full of young bees for winter and are the ones next spring to count on for honey. Such colonies also are less liable to swarm, and if well bred Italians properly cared for should give large honey yield per colony if season permits.

For out apiaries, the auto truck saves much loss of time and makes possible good locations too far from home for profit if horses must be means of travel.

Now my brother bee-keeper I have simply described my apiaries, not as model, but under present conditions as they are, 25,000 pounds to over double that are returns per year, and you can do as well I know.

These warm days I must get my bees ready for winter, so wish all of you profitable meeting.

Yours truly,
N. E. France.

The Secretary read. this paper after our meeting had adjourned so there was no chance for discussion.

THE PRESENT AND FUTURE OF BEE-KEEPING IN THE UNITED STATES.

(By E. R. Root.)

I do not know but I am a little like Josh Billings when he said, "What is the use of knowing so much when so much you know ain't so?" Or, perhaps to be more exact, to quote the downeast Yankee, who, in endeavoring to quote Josh Billings, said, "What is the use of saying so much when so much you say hadn't orter be said?" Joking aside, when we approach this question of the present and future of bee-keeping, and especially the question of advancing prices, I hardly know what to say. Should I bull the market too high by painting too rosy a picture, and then the war should stop and prices collapse, I might be blamed by a lot of bee-keepers because of my advice they held their honey only to find that the market had taken a sharp decline. If I told the bee-keepers that they had better sell at once if they have not already done so, and then find prices go up, I would be blamed again.

During these war times no one can actually forecast what is going to happen. During the latter part of the fall the market was beginning to rise; and then it halted around 11 and 12 cents for the best table extracted. There was a feeling at the time, and this feeling was shared by Wall Street bankers and army men, that the war would be over by Christmas, or not later than the first of January. That feeling was becoming so strong that prices began to tip downward; and the predictions were that there would be a decline on all market commodities. The result was that buyers were fearful, and did not pay more than 12 cents at the outside. Many bee-keepers sold, having imbibed the feeling that the war would be over in three months, and that they had better sell then

than to take their chances on what might happen later.

In the meantime Russia collapsed, and things began to look dark for the allies. Predictions were made, and are still being made, that the war will last a year, and might continue for five years. In the meantime the central powers made a dip down into the Italian line. It was known, also, that the submarine menace had not been met. Prices of food stuffs began to take an upward trend, including honey; and now honey has reached a figure in large lots that is higher than was ever known before in the history of bee-keeping; and the man who sold at 11 and 12 cents for extracted is berating himself and the buyer for having sold at 12 cents; for he discovers in the bee-journals that some of the big markets are quoting extracted honey around 15 cents, with still an upward trend. He has also discovered that there is not much extracted or comb honey left, and buyers are out everywhere trying to get honey.

He should remember, however, that it costs about a cent a pound to get honey from the producer to the market; and there are other expenses such as drayage, literage, leakage, etc., that will absorb another cent. The buyer will not work on a closer margin than one cent, and he will get two or three if he can. Producers should remember that when the market is quoted at 15 cents it will mean 12 or 13 f. o. b. his station. No matter how high prices for honey got there, they are there and there is no use in denying the fact. No one could tell in advance that Russia would collapse, and that Italy would suffer a reverse. No one could tell that the war would continue, and that prices would stiffen after the first of October; but they have done so. The lesson that comes to

E. R. ROOT.

us now is to prepare for the coming season, for prices will undoubtedly start off brisk, and they may, and probably will, sag a little in anticipation of the crop, especially if prospects are good. The producer should have his equipment ready. If his supplies are not ordered, he should order at once, for freights are slow and congested.

The winter is before us, and there may be and probable will be some winter losses. Colonies that are not well packed will need more stores than those properly housed. Therefore it becomes the duty of every bee-keeper to put his bees in the cellar if he has not already done so, or put packing material around the outside of the hives out doors. This can be done in many parts of the West by piling cornstalks around the hives.

There will be an enormous demand for bees in package form this year, and many bee-keepers will recoup their losses by buying bees in pound packages. It is important to place your order early, and with a reliable breeder; and be sure to stipulate that the bees are not to be delivered later than a certain date, or else the money is to be returned.

Last spring was very backward and unfavorable for the bee-keepers of the South. Many of them were not able to rear their queens or to get their bees ready for shipment. We hope that conditions will be better this coming spring; for if there ever was a time when we need to get all the honey there is in sight, it is right now. It is evident that, if the war continues, the allies will continue to buy vast quantities of honey. The old lines of trade, especially the bottling trade, is having an active demand, and if there ever was a time when the bee-keeper stood a chance to make some money it is right now. Even if only half a crop of honey is secured it will bring a much larger return than a full crop brought four years ago, or during the first year of the war, when prices were clear down and begging a market. Therefor I urge you to be ready for the season when it comes.

The President—The next thing will be reports of committees appointed last year. Committee in Reference to Bee-keeping in Public Schools. Mr. King is chairman.

Mr. King—There was nothing done. And we have no report to make.

The President—Gentlemen, what will you do with the report of the committee, and the committee? Is it your pleasure to continue the committee, with instructions to get busy and do something, or will you receive the report and dismiss the committee?

Mr. Williams—Mr. Chairman, I will have to plead quilty, soneway, I dont know how it is. Mr. King came to me to-day and asked me what I had done about this. I told him I did not know I was on the committee even. I thought I attended all the sessions last year. I don't remember about my being appointed on this committee, my name appeared nowhere.

The President—You are not on the committee.

The Secretary—Yes, he is.

The President—According to the report made by the Secretary, it is Mr. King, Dr. Baxter and Mr. Withrow.

Mr. Williams—There is one thing I should like to say right here that would be to the benefit of the fraternity. My wife is considered a pretty good cook, I am a living example, and she never had tried cooking with honey until after the convention last year, I think. I got a little leaflet with some receipes and took it home and she used some of those with some kinds of cooking, especially cookies and some kinds of cakes and she does not use anything else now but honey. Some of our neighbors have had some of the honey and have used some of those recipes, and I do not believe that I will be able to furnish them with the honey that they want. I think that is pretty good stuff.

The President—It says here, a motion prevailed to appoint a committee of three to take up the matter of having it taught in the schools of the State, in classes of domestic science. The Chair appointed as such committee Messrs. King, Cummings and Dr. Baxter.

The Secretary—That was the year before. Mr. Cummings wrote a letter, saying that he could not act, that went into last year's report.

The President—This is the committee that is actually in existence.

Dr. Baxter—I acknowledge I was on that committee, and I asked to be relieved. I was on several other committees. I was made chairman of the Committee on Appointment and asked to be relieved, and you appointed Mr. King as chairman.

The President—Gentlemen, it is up to you. What will you do with the committee?

A Member—Court martial.

Mr. Dadant—This is a very important subject. The only trouble is that it is too large for a committee without a salary. I think the reason why Mr. Williams was mentioned in connection with it is that George B. Williams of Indiana introduced this matt r. It is one of the hobbies of

Mr. Williams of Indiana and it is certainly a good hobby, but it will take money to push it forward. I believe it ought to be considered whether we can do anything or not.

The President—I would suggest that you receive the report and dismiss the committee, or take it up again and reappoint it if you want to. Let us get rid of this question one way or another.

A Member—I suggest the same committee until they get a report. They have not got any yet.

The President—Do you make that as a motion?

A Member—Yes.

The motion was seconded by Mr. Kildow.

A Member—I should like to ask who this committee is.

The President—The same men, King, Baxter and Withrow. Are you ready for the question?

The motion was carried.

COMMITTEE ON PREMIUMS, STATE FAIR.

The President—Dr. Baxter, what have you done?

Dr. Baxter—I took up the matter of raising the premiums on some and discarding them on others, at the State Fair, soon after our meeting last year. The premium on comb honey, extracted honey and canned honey was raised $5 on each premium. Several of the premiums, such as the different samples of honey were discarded. The premium on wax, which consisted of two premiums, one for 50 pounds of wax and one for designs in wax, were consolidated and made one at practically the same amount of money that was paid for the two premiums. A man in order to get a premium for wax must have designs. The premiums for various races of bees were discarded except for the leather colored, the dark Italians and golden Italians. The committee thought that it was better to instruct people in regard to one type of bee, for instance, to confine the premium list to the Italian bee, as we really thought that was the best bee. The premium was raised on a colony of bees from $5 to $10.

We went rather exhaustively into the premiums at the various fairs, and we find that our premium list is really higher than at most of the fairs in the country. We always hear cited the Minnesota Fair with their wonderful premium list, but we find that they charge the exhibitors 5 cents a square foot for exhibiting, and really, when a man has paid his exhibit fee and even won all the premiums, he is not as far along, as far as his finances are concerned, as he is here.

The Fair Board has been very liberal with us and has done everything, practically, that we wanted them to do. Practically, the general amount paid for premiums is the same as it was before. All they have done is to raise the premium on a few of the exhibits and discard some that we considered worthless. We discarded especially the one on the various samples which consisted of Mississippi honey, Alabama honey, Hawaian honey and a few honeys that we did not know anything about. It was simply a matter, in that case, not of a man's ability to produce a honey, but how much money he had and how many samples he could buy.

The premium list at the present time I think is about as good as it can be, the finest at the disposal of the State Board of Agriculture. Possibly when the new board comes in and takes charge of the Fair, it will be under the direction of the Department of Agriculture, which will have charge of the Fair after the Centennial exhibition this coming year. We might get the premium list raised again at that time. At the present it is impossible to increase the total amount of the premiums.

The report was received and the committee continued.

The President—I will make another suggestion. We have a Committee on Buildings, and as it is out of the question to expect a building under present conditions, war times, for several years to come, probably it would be a good idea to instruct the Premium Committee to see about the exhibition room. Have you anything to say, Doctor?

Dr. Baxter—In regard to the building, if you will remember, at the last meeting I talked to you about a plan for a building at the fair ground. We went before the Legislature this last winter in regard to this building. There was practically no opposition to the building. It seems as if all the appropriation committees were in favor of the building, but the financial condition of our State, due to the change in the various departments from the old loose system of 119 various departments to nine bureaus, the finances of the State were so tied up that our new Governor asked us not to present the bill for the appropriation, as it was impossible for him to pass the bill, he would have to veto it, on account of the amount of appropriations asked for. There was about

$2,500,000 asked for in the appropriation, in excess of the taxes of the State. Naturally your committee felt that the best thing they could do was to follow the advice of the powers that be. Since that time we have had a fire at the Fair grounds, which destroyed the Dome Building, as you all know. Our exhibit was in the Dome Building, on the second floor. It has been all over the building. During the last week I went over to the Department of Agriculture to find out what provisions had been made for the coming year. Well, there has not been any made. They would like to build a building for the Centennial, but it would necessitate a special call of the Legislature, and even if they got the appropriation, it would be doubtful if they could build a building to be used next September or October.

Mr. Kildow—August.

Dr. Baxter—Next August. But the director informed me that when the new building was built, the bee-keepers would be given a hearing and a building such as we asked for would no doubt be built as a part of that building. But for the present it will be necessary for us to remain in the main building, as we were this year. We will probably get a little more space than we have, but we cannot do anything about the building now until the new Director of Agriculture has charge of that department, and it will be up to the Board of Agriculture then to ask for that appropriation, which no doubt they will.

The Secretary made a motion that the committees be both continued, and after a good deal of discussion the motion was amended by merging the committees. both into one.

Mr. Dadant—We are wasting a lot of time on a needle point. It is very unimportant whether we have one committee or three. Let us get through.

The President—The Committee on Premiums and State Fair Grounds and Buildings is Dr. Baxter, Mr. Stone and E. J. Baxter. E. J. Baxter resigns and the chair appoints C. P. Dadant instead.

The next committee is the Committee on Exhibits at the last State Fair. Dr. Baxter is chairman of that committee.

REPORT ON COMMITTEE ON EXHIBITS.

Dr. Baxter—That is the report of the committee that has charge of the Illinois State Bee-Keepers' Association exhibit at the Fair, which is an educational exhibit. The exhibit was practically the same as carried out last year, in which we showed people how the honey was extracted, showed the various kinds of hives and manipulation and the grading of honey. You know we had the fire, and the afternoon of the fire we had completed our exhibit, as far as cleaning up and repainting and redecorating; our cabinet was destroyed and the cage. We had to make a cage in order to extract the honey on account of the flies in the buildings, so we had to build a new cage and a new cabinet. I have not written a report of the actual expenditure to the State Bee-Keepers' Association, because the man who made the cage had enough lumber in his bill to make a solid cage, so I returned the bill and have not yet received a written report at this time of the expenditures.

The expenditures were greater than we had anticipated. on account of the fire. We did not carry insurance; it was an absolute loss. But I might add that the exhibition of extracting honey was probably the most interesting exhibit on the Fair ground to the majority of people. We were on the ground floor this time, in the main building, and practically at all times when the extractor was running there was a crowd of people around that cage watching the work. Mr. Withrow donated his honey. From my observation, I think that that exhibit should be continued every year. The sales of honey at the grounds have increased about 40 per cent.

We received the congratulations of the Board of Agriculture for having the best and most complete exhibit on the ground, and it did not make any difference where you went among the people, you could hear them all talking about the extracting of honey. It was something new. You know the majority of people imagine that extracted honey is obtained by putting honey into a tub and chopping it up with a spade and dumping it into a sack and letting it run out. After they discovered that extracted honey was clean, that it was not refuse honey that the bee-keeper wanted to get rid of, the sales in this town alone, in all the grocery stores, before the shortage of sugar came, have absolutely doubled and I attribute that to our exhibit at the Fair. Of course, Springfield receives more benefit of that, possibly at the present times, than the rest of the State, but it is only a question of time until we will have reached all corners of the State.

This exhibit was put on at the suggestion of Mr. Dadant, and I think it was one of the best things that has ever been suggested to this Association. The only thing about our exhibit there, it is a little

crowded in the space we have, and as time goes on and we possibly can get a better space, there is no doubt that there will be a greater benefit.

I had Mr. Heinzel in charge of the soliciting department to get members for the Association and he was a grand success. If you have anything that you want to sell, I would advise you to get Mr. Heinzel to go out and help you. He would corner a man and get him to join the Association and he got 73 of them. Last year we had 35 and thought we were doing well. There is no doubt in another year we can possibly double the 73.

The interest in bee-keeping is on the increase and as we were talking a few minutes ago about the question of an inspector, I would say that the inspector is a v ry busy man. There was not a minute but what some one was talking to him, in fact, they came so fast that two or three of the men around there volunteered to help him out and I think that it is a good place to reach the average man with a few hives of bees.

We had a book for all bee-keepers to register and do you know that on that book there were over 63,000 colonies of bees represented. Most of them had more than one, from two up to twenty colonies, so there is no doubt that there is a great field for the Association's exhibit in an educational line at the Illinois State Fair and I hope that this Association will see fit to continue the work.

The President—I want to tell the ladies and gentelmen present that I resigned from this committee, not because I wanted to get out of the work, but because Mr. Dadant is so much better qualified, visiting fairs in all parts of the country and having charge of bee exhibits, that in many ways he is better qualified to know what has to be done to make a good exhibit than I am and that is the reason that I resigned from this committee and appointed Mr. Dadant in my place. We want to make this committee as strong as possible. I have done nothing on this committee the past year, I am sorry to say, for it is impossible for me to do anything. We must give Dr. Baxter and the other members of the committee a great deal of credit for what they have done. They have certainly accomplished a great deal.

The next committee will be the Committee on Medals for display at the State meeting. Mr. Dadant is chairman.

Mr. Dadant—This matter was discussed between, I believe, the three members of the committee, our Secretary, Dr. Baxter and myself, is that correct?

The Secretary—And Mr. Newburn. Mr. Newburn, when he was corresponded with, was away from home. The balance of the committee proceeded and left it with Dr. Baxter and the Secretary.

Mr. Dadant—I will ask our Secretary to report on this, because he has done the last work on it. The way the matter stood, there was correspondence between us and when the question was raised of placing my father's picture on one of the medals to be given, I declined to act any further. I did not think it was proper for me to act upon that matter and said I would leave it to the other members of the committee, so that this matter was decided between them. I will therefore ask our Secretary to report, please, what action was taken

The Secretary—When Mr. Dadant was dropping out, he asked the Secretary to correspond with different members. He had never been able to get Mr. Newburn and the letter was returned undelivered. We began correspondence with the different firms who make medals and we got bids from different ones and we went to the Secretary of the State Board of Agriculture to ascertain where they got the medals that were given every year at the Fair to the old soldiers and which were very fine. He gave the address of the Green Duck Company, of Chicago. We corresponded with them and their rate was $75 for making the die. We corresponded with several others, and theirs were all $85. We liked the design of the Green Duck Company much better than any other. I submitted it to Dr. Baxter and I believe I sent papers to Mr. Dadant and he sent them back, saying whatever we did he would be satisfied with and we closed the contract for them to make the die at $75. It was not very long until they wrote us back that because of the change in price of everything they could not possibly do it for less than $125. It would take hand work to do it and it would take so long that they could not possibly do it for less than $125, and Dr. Baxter and I resolved that we would not have the medal made, but would issue certificates and this is the design. The doctor knew of a man who would draw that certificate and make it like that (illustrating) and we would give that certificate to members who exhibited 150 pounds of comb honey, or 150 pounds of extracted honey. We were to have four medals, two gold medals and two silver medals. The two gold medals are to be Dr. Miller and Langstroth, and the silver medals were to be Father Dadant and Quinby.

Mr. Dadant—Put it the other way about, Langstroth and Miller, Quinby and Dadant.

The Secretary—Mr. Miller is more of a comb honey man. Mr. Quinby is a man that we are not so familiar with. When they get these certificates three times, then they will be entitled to the gold medal. If they won the gold medal once and the silver medal once, then they would have to keep on until they got the gold medal three times, or the silver medal three times.

Dr. Baxter—I might add to that report, also, that when you receive that metal, it is your permanent property. If you have won this certificate three times, you will also be given a certificate that is in process of drawing that was brought up for your approval; if you want to add anything to it, that is for the Association to decide. On that certificate will be a free hand drawing of the individual who is on that medal, that is made simply by having four inserts to set in this plate, so that a man when he has the medal will also have a certificate of ownership. It is somewhat larger than that and is a much finer certificate. This certificate will be reduced somewhat and be in two colors. If any of you have any criticism or any remark in regard to this premium business, we would like to hear it. Then the committee will know how it stands with the Association.

The Secretary—Do you know anything about what a lithograph copy of that will cost?

Dr. Baxter—They do not cost much after you get the plate made. The plate will cost about five or six dollars.

Mr. Dadant—What sort of plate do you expect to make?

Dr. Baxter—It will be simply an etching, it will be a zinc plate.

The President—Gentlemen, you have heard the report of the committee. The committee is not through with its business. What is your wish? Is there any motion as to how you want to dispose of the matter?

On motion, the committee was continued.

The President—I wish to announce the following Committee on Resolutions: J. W. Newburn, C. P. Dadant and H. W. Williams.

Mr. Williams—It will be impossible for me to act, because I have to go home early in the morning and will not be at the forenoon session.

The President—All right, Mr. Williams, we will appoint some one in your place. Is the Auditing Committee ready to report?

Mr. Kildow—What will you do with the committee that made the report on the State educational question? Was it discontinued or what was done with it?

The President—I believe I missed that, gentlemen. You have heard the report of your Committee on Exhibits at the State Fair, what will you do with that report and the committee. It is a very good committee and I believe it ought to be continued. The committee is Dr. Baxter, Mr. Williams, Mr. Kildow and Mr. Pyles.

Mr. Kildow—I am on that committee and I do not like to make a motion, but it seems to me that that committee or another one should be put up, because I think that is one of the good things at the Fair. It is educational and that is what we are after.

A motion by Mr. Heinzel that the committee be continued was seconded and carried.

QUESTION BOX.

Question—Where are we to get sugar for spring stimulating?

Mr. Root—It is a hard question, because I do not know what the Government is going to do. We can get brown sugar and I think you can go to the large wholesalers and simply say that you want this sugar in order that you can get two pounds of honey to add to it. Put it up to them as a food conservation. I think there is some provision that if you can show that by getting the sugar you can add ten pounds more, that you will be able to get it. I will tell you what we did last week. We went to the wholesalers and we told them that we needed this sugar and that we would have that much more next spring, they gave us two barrels but would not give us any more and they said, "If you come in within two months, we will give you two barrels more. If you want to use if for yourself or family or sell it, you cannot get it. You must show proper evidence that you want it for making ten pounds more of sweet. I think that does not contravene the provision of the law. There is another thing, you can get the dark sugar, light brown sugar and molasses, you can get Porto Rican honey, that is rather an inferior quality of honey, but we have fed it to our bees the last few years.

A Member—How about the disease that you might get from Porto Rican honey?

Mr. Root—There is no disease in Porto Rico. We have fed Porto Rican honey and found it perfectly safe. When we fed it at all, we were getting it at 4 cents a

pound. Now it has gone up, like every other thing.

Question—When would you feed a thin syrup and when would you feed a thick syrup?

Mr. Dadant—I do not think that any practical bee-keeper would hesitate in deciding between the two. The thick syrup would be better in the fall and thin syrup in the spring. Bees in the spring need water, they go after water. If you give them thin syrup, they will go less after water than if the syrup is thick. But in the fall they do not need water, because they do not breed. It takes no less than two pounds of sugar to a pint of water in winter, some people use two and a half pounds.

Question—What strain of bees as a rule gives the best results?

Mr. Warner—The light three banded Italians.

The Secretary—I have my hives so arranged that the best bees are on the stand of concrete foundations nearest to where I approach them from the honey house, because they do not sting as bad as the other. When I went to get honey to exhibit at the Fair, I found all the hives that had any finished combs in them were here among these bees Out of one hive I took just one frame, that was the only one in that hive that was all sealed with tapers to the outside. I took that one frame out and I thought they would not make any more honey and I thought I would leave the two frames to fill the space. I was extracting a week ago and those two frames were exactly the width of my three fingers and they weighed 13 pounds apiece. They had filled them out so far and had done it all since the Fair and those were light Italians. They were among my best. They were queens that I got from Mr. Dadant and they were not the yellow, but they were the three banded Italians. Because of the rush of work at our place I have nine stands yet to extract from and every stand back in the shed, so that my bees are shaded from the 3 o'clock sun and I cannot say what the result is going to be there, but I have an idea that they are all of them full, just as the others were. None of them have done better than the light Italians.

Mr. Root—I have felt that the ordinary old fashioned three banded Italians have not been bred for beauty, for color, but for business and they are the ones that give the results.

The Secretary—You do not call them hybrid, do you?

Mr. Root—No, I call them the old fashioned Italians.

The President—That is my hobby, when you come to the question of what race or strain of bees is the money maker. I have been testing them for the last forty years and observing pretty closely when I go over my apiary in the fall to do my fall extracting. My hives are all ten frame hives; I cut them down to eight or seven frames and some times, although rarely, to six frames, according to the strength of the colony. The surplus combs I put away for spring feeding and I invariably mark my colonies according to what they produce and according to the stores in the brood chamber. This fall I have marked all dark, leather colored Italians, the progeny from queens that I got from Mr. P. L. Riley thirty years ago. I have tried to make strains since of Moore, Morgan, Law and a dozen others, some darker, some lighter and some just like gold. I do not want them on the place. I am going to breed from these that I have marked. I have some colonies there that have produced two full boxes of surplus honey. That means about 80 pounds of extracted honey, when the adjacent colonies, apparently just as strong, light colored, have only produced just enough to winter on.

These colonies that I took these two boxes off have so much honey that I have taken out two side combs and I weighed six of these side combs and they weighed a little over 70 pounds. That is what I have got to feed back in the spring. I do not have to buy sugar if the bees do not make a drop of honey before the middle of May. But you cannot do that with hybrids or black bees or light colored ones, as a rule. I do not want anything to do with light colored bees. Give me the old genuine leather colored three-banded Italians.

Mr. Dadant—I do not believe we ought to condemn the light Italian bee unless it has been bred for color. The man who buys Italian bees and keeps breeding from the yellows, will find he is getting yellow bees, but as a rule he is overlooking the other qualities. If you breed from your best producing colonies, whether they are bright yellow or only leather colored, provided they are pure Italians, you are doing the right thing. If you breed from the yellowest, you are likely not to get good results. We should breed from those Italians that give us the best results.

The President—And those are the dark colored three banded Italians.

The Secretary—Not always for me.

Mr. Williams—Modesty prevents me from telling from whom I got the bright golden Italian queen. I have not had long experience as yet. I started with 35 I think, in the spring. I had one hive that made me 160 pounds of nice comb honey, as nice as you ever saw. One of my neighbors came one day admiring those bees for their beautiful color. I said to him. "I would not take ten dollars for that queen unless I knew where I could replace her." That was a beautiful queen, but the foul brood got into the hive and I lost her last winter. I want the golden Italian with the leather bands.

Mr. Root—When you speak of the golden, maybe you have in mind just the king of bees that I call the ordinary Italians. There are Italians that are so dark that a good many would call them hybrid. The kind that I speak of was the kind the Senior Mr. Dadant imported from Italy. My father had some of that strain. We called them leather colored plain three banded bees. Very often we are confused by what we say on a matter of color.

Mr. Baxter—My golden bees are just as yellow as gold when the sun shines on them, they are almost transparent and I believe those bees have been bred up for color. They are as cross as can be and they will follow you up all day long and that is about all they know. What I call the leather colored, the bees themselves have three yellow bands, the abdomen is rather dark, and they do not shine like gold The queen has the abdomen of leather color, she is dark; while the queens of the goldens are just as bright as they can be and the drones are beautiful, but they are no good as far as work is concerned. I have been breeding for results. I had many colonies that produced me over 350 pounds per colony. I never had any light gold ones that did that. I had one apiary of 72 colonies that produced 28 barrels of honey, 550 to 575 pounds net each, but there were very few golden bees in them and those goldens did not produce hardly anything. That has been the result with me, not only last year, but I have had that experience a good many years.

Mr. Kildow—I have not taken pains to select out the goldens. There are good ones in both. We select the best and get along all right.

The President—In the fall when I go throught my bees to prepare them for winter, do my fall extracting, I make preparations and select the colonies I want for next year's breeding and those must be the very best ones on the place and they never happen to be the light colored ones. If they had been light colored ones, I would have taken them, the same as dark, but my object is to get results. I never breed from cross colonies, no matter what the good qualities are. I want results as the first requisite.

Mr. Pellett—I think it is quite true that most of the strains of golden in this country are quite inferior to the three banded strains. There are one or two who have developed strains of golden that have given pretty good results, but unless a man knows the strain he is buying, the chances are less in favor of getting good results from the golden than the three bands, because there are three banded strains that are giving very good results. I never got more than one strain of golden that were worth their board. Several of them were not hardy and generally they are inferior as honey storers. I am speaking generally. There are strains of golden that are very satisfactory and have good honey gathering qualities. It is a difference of opinion which is largely due to different strains.

Question—Why do not more women attend the bee-keepers meetings?

Mr. Pellett—I can speak for one woman, and that is Mrs. Pellett. I can tell you four good reasons why she does not attend and that is, four children.

Dr. Baxter—I can speak for one who does not attend for the same reason.

Mr. Dadant—I have one very good reason, at least my wife has. She says so rarely does she find ladies at a bee-keepers' convention that she has quit. We traveled all over the country attending many of the meetings and there were mostly men. It was only where they knew that a lady was coming and they took particular pains to have ladies wait on her, or welcome her, that there were ladies present. I am sorry that the ladies do not come out more, yet we have to-day probably as many as we usually have. I saw more in Toronto, Canada, than I did at any other place.

The Secretary—I want to say one thing that we do to encourage the attendance of ladies. We always have a shorthand reporter that is a lady, and if we advertise that we are going to have a lady for a reporter, the women will know that they are not going to be alone if they come.

The President—Ladies and Gentlemen—Our program having been completed this afternoon, and no more questions, I will say that we have with us Mr. Erbaugh of the State Department of Agriculture, who has come to Illinois to cooperate with us in inspection work along bee-keeping lines,

and we would like to have him tell us something about what the plans are.

Mr. Erbaugh—Ladies and Gentlemen: Your President made a mistake. I am not from the State Department, but from the United States Department of Agriculture. I was sent here as an emergency field agent in bee-keeping. At the time of the declaration of war by our country upon Germany last spring, there came also increased cooperation for the furthering of agricultural pursuits, making an effort to cope with the food situation. Of course you have heard something about it through Mr. Root and Mr. Pellett who went to Washington and with their help we succeeded in getting an increased appropriation. I am the result or one of them and this is in addition to the inspection provided for by the United States Department of Agriculture. They sent me here to do what I could in your State to help you out in this proposition. I know something about the condition of your flow and conditions for the bee-keeping industry in the State, coming from a neighboring state, the state of Indiana and conditions are similar, although not identical. I know, also, that probably, as I have heard stated before, the bee-keeping industry is the most inefficient industry or occupation that one can think of or name. I would shudder to think of what would happen to the majority of our business houses if they used no better business principles, or no better manipulation or procedure than those of the average bee-keeper with his equipment. There certainly would be some cases of bankruptcy in our financial system.

There is a great deal of opportunity for an inspection man when you consider the thing along that line. The census reports for Illinois I believe give you about 155,800 colonies. That is wrong. That considers farmers only. We have to take into consideration the little fellow in the town. It is probably nearer 170,000 colonies.

The President—Double that.

Mr. Erbaugh—Well, I believe you are right. Your report also shows that those are averaging less than 10 pounds a colony surplus a year; not making expenses, if you consider your investment, consider the time you spend, and so on. A man that has been keeping bees or has studied a little, can readily see the possibility of an increase to at least 50 pounds on an average per colony per year. President Baxter would laugh to speak of averaging only 50 pounds a year, but we cannot all do what he can do. But we can produce at least 50 pounds. It is not necessary to have years and years of experience, although it is a most valuable thing, but a young fellow can start out. It is a good thing to study this winter, have some plans in your head for next spring's work. I would be very much interested to find out how many people in this audience really protect their bees. How many winter in the cellar, will you hold up your hands?. That is encouraging.

The Secretary—I have done it but quit.

Mr. Erbaugh—How many winter outside and pack? Well, that helps. How many winter outside and leave them in single wall hives? What do you do it for? Do you think it is the best idea?

The President—Perfectly right and perfectly sane and safe, if you do it right.

Mr. Erbaugh—How do you do it?

The President—I protect the outside of the hive with a foot of forest leaves, leaves in the cap, leaves on the outside held in place with a fence. Ladies and gentlemen I want to make a few remarks to set myself right. I claim to be a pupil of Charles Dadant, whom I knew intimately for forty years before he died. If you will look over the reports of the National Bee-Keepers Association, the North Western Bee-Keepers Association and other associations, you will see for the last forty years I have been advocating certain things for which people made fun of me. These things were advocated by Mr. Dadant. One thing was the large hive. How many tilts have I had with bee-keepers at Chicago and other places, about the Dadant hive, the shallow hive and the Langstroth hive. I advocated a larger hive than the Langstroth. As early as 1883 I advocated the absorbent packing on top of the colonies. They made fun of me, they said a sealed cover was much better. I have been trying it, I never knew what it meant before. I had colonies starved to death, with a pane of ice as thick as a pane of glass over the honey. But I never had that trouble where I packed them properly. I used the chaff hive made by the late Mr. Dadant, four inches of chaff. These hives invariably winter very well with the absorbent packing on the top. I use a mat made of slough grass laid over the frames with a little stick of wood laid across under it, so that when they go to the top they can go from one frame to the other very successfully. Then my caps are not shallow or flat like they are in other hives, they give about six inches space. Now, after I have laid this mat over the combs, I fill that cap full of dry forest leaves and I invert it right on top of this mat. I found out that in the

spring when I came to unpack my bees, a great many of those leaves were wet from the exhalation of the bees. When steam arose through the mat and accumulated through the leaves, the leaves absorbed the moisture and would be wet. To remove this I made an inch augur hole at the top end of the cap and I nailed a little piece of wire screening over that so that nothing could get in.

When I explained that to the beekeepers they laughed at me, they said there was too much ventilation, that the bees would freeze to death. They have come to think that theory is one thing and practice is another. Theory does not always work with practice. We find that with many things and they have decided to use these chaff hives. I have hives that are made of two walls, an inside wall, seven-eighths inch thick and an outside wall seven-eighths inch thick, with a dead air space between the two walls of seven-eighths inch. These winter very well with leaves. Then I have hives that I have used for forty years that have only one single wall seven-eighths inch thick, then a cap just like the others, 6 inches deep. Now these hives, to handle them, in addition to packing them inside I pack them on the outside with dry leaves, about a foot space all around the hive and these leaves are packed down solid and a galvanized iron wire netting around them. They very rarely are wet, seldom in the spring I find them wet, anyhow they winter very well in those hives.

And I would say another thing I forgot to mention, that my hives are all ten frames and a division board; as I told you some time ago, I remove two frames from the west side of the hives, some times three, leaving only seven, and some times only six, according to the strength of the colony. Then I move the dummies up to the frames and this space is also filled with leaves; so I reduce the capacity of the room occupied by the colony according to the number of bees to take care of the space, to keep it warm, and I have excellent results. I wintered colonies with only five frames in that way from the time I packed them in November until I opened them up late in April and sometimes not until May. Then I opened some of them, not until after apple bloom and found them in fine shape.

I cannot get a bee man; we are always in need of them, they are not to be had; so I have of late years been doing the work myself, but I have had to neglect doing it at the proper time, that is very bad policy. Everything should be done just when it ought to be, and the man that can do that is the man that will always succeed.

The Secretary—Mr. President: I find that we can do a thing one way and it may work out all right, but it may not be the best way. Until last winter I have packed my bees just as our President says he has, put in two corn cobs, or two sticks half the size of corn cobs, have them parallel, so as to give a bridge for the bees and last winter I took a section case and filled it with leaves, I guess you will understand it. If you have an oil cloth, put the oil cloth over the top of the leaves and put the cover on to that, and I never had bees come through as well as they did last winter, and there were a good many days that the cold and consecutively cold lasted for a week or more. I was fearful they would work up through the leaves, but in all the hives I never found one that had done so. Some of them were a little damp.

Mr. Root—I just want to remark personally that Mr. Baxter's method of packing his bees is exactly orthodox, so far as I understand orthodoxy. I think it is a very good packing. I think that the packing on the outside is very seldom wet. Another thing, a bunch of leaves will shed water and I imagine it would be very seldom wet. I think you will find nature has put them so that they will shed water. So you are getting a double walled hive which you are already starting with a double thickness of packing.

I do not think we can over emphasize the advantage of packing. Too many beekeepers, are suffering because they do not have enough packing and I think the error is usually in not having enough rather than too much.

This question of sealing is an absorbing one. I have for many years in our locality tried both ways and I have never yet been able to determine which is better, sealed or unsealed.

The President—We tried it first in 1884 or 1885. There are a great many beekeepers in the country who favor the scheme of absorbing moisture. I am watching it every year. Take a dozen colonies in single walled hives, with the same exposure, get them along side by side, same strength, similar queens, get the colonies and stores exactly alike; you will find that the colonies packed with wind breaks use less stores than the colonies that are not so packed. As a general thing, the single walled hives winter. but they will be so weak, they will hardly do business, while the sheltered hive will come out in nice strong colonies. So I am

a believer in packing, because I think it pays, and I am a firm believer in wind breaks. I have seen so many yards, traveling through the country, where they said they wintered through without any packing. Well, they had a splendid wind break. I have seen colonies die where they had no wind break. I would dispense with the packing and have a wind break if I had only one, but I want both.

Mr. Kildow—It seems to me that if you use the sealed cover you must have abundant packing so that the top of the cover does not get cold.

The President—Yes.

Mr. Kildow—Otherwise you will have a cake of ice over them. That is the experience I have had.

Mr. Dadant—I would like to say something in regard to the sealed covers. Experience is a great thing, especially when you have to pay for it. We tried 80 chaff hives that Mr. Baxter spoke about, chaff hives with 3 inch wall all around and under. The greatest trouble with those chaff hives was that when a warm day came the bees did not know it. The colony that had only an ich or so of wall knew when there was a warm day and took a flight. Where we are located a warm day does the bees a lot of good; we want them to fly on a warm day. In our large chaff hives they did not fly on a warm day. I think understanding the matter better now we could make a chaff hive from which they would fly.

In regard to the sealed cover, we had those 80 chaff hives and we had also two or three hundred hives that you might call single wall, they have a double wall in the back, that is, two planks, one against the other on the north side of the hive—the hive always faces south—and on the west side a division board. We had both those kinds of hives with oil cloths on the frames, those cloths were either painted or oiled, or a regular oil cloth, they were absolutely air tight, sealed covers. We used forest leaves in the cap, not because we wanted them to absorb the moisture, they could not, but simply to keep the top warm.

In the winter of 1884-85, that is a good while ago, but I can remember it as well as yesterday, we had a tremendously long winter, the bees were confined to the hives a long time; the oil cloths on top of those hives were not all perfect, some were moisture proof, some had little holes made by the bees; some of those cloths had been on a long time and had holes six inches across and we had the leaves over those. When we examined the bees after that hard, cold winter, the hives that had the biggest holes, with the greatest chance for the moisture to arise into the forest leaves, were the healthiest. The hives that were absolutely air tight, sealed covering, had moisture all over the combs because, with the inside of the hive getting below the freezing point, the moisture of the bees would freeze heavily around them, and when the thaw came, we found those bees soaked with water, while the colonies with the open space, and therefore no sealed covers, but a space for the moisture to rise into those leaves, were dry. This was a lesson I cannot forget. I do not say that it will happen every year, in fact it will not, because there are very few seasons like that, but that lesson was enough for me and since that time I have never had sealed covers on my hives. We use a straw mat, as Mr. Baxter told you, and our caps telescope. That is, I think, one great advantage over the ordinary Langstroth hive in which one story fits over the other. The reason I use the telescope cover is that it breaks the joint. It fits over and goes down about an inch and there is no joint for the air to get through. The straw and the leaves over the bees are like a blanket. When you have a woolen blanket over you, the moisture rises from your body and gets lost, yet you are not in a draft. That is why I am in favor of absorbing packing over the bees.

I do not want sealed covers. They have told me that in the state of nature the bees would seal everything. I do not think they seal it because they want sealed covers for cold weather. I think the reason they seal the trunk in the tree is to keep the insects off that are in the rotten wood. They seal everything they cannot remove, and make it tight, but I do not think that has anything to do with the question of wintering. I believe the hives that have a large opening, one that will give a chance for ventilation or the absorption of dampness, are the better ones, better than those that are nearly closed, because in the latter case the moisture congeals right over the frames.

The Secretary—If nobody else wants to say anything, I should like to finish up some of the things that Mr. Dadant has said, as carrying out some of the things that I said, about the slotted board having plenty of air holes and there is no sealing there at all. There is no burlap or anything to protect the leaves from getting down among the combs, only held up by those slotted boards. And I thought perhaps the moisture might curl up those

slotted boards and warp them all out of shape. I had some of those boards spring up one winter, because I did not have any packing or anything on and the moisture warped them. I had that in mind and I was afraid that the moisture would curl them all up, and the evidence that there was not any moisture that struck them was that there was only one hive that had warped the least bit and that was one that stood in the wind. I protect my bees well against the wind, and I believe that has more to do, as Mr. Root said, I believe the unpacked hive out of the wind is just as good as a packed hive in the wind. That is evidence that there is no moisture there at all. If there is any moisture in it the leaves get it all and the bees do not get it.

Mr. Dadant—If I could have my choice for wintering, it would be a shed in which the bees would be enclosed in bad weather and the front of which would be open whenever the sun was shining, so that the bees could fly. I believe that would be an ideal arrangement. I like the big packing boxes, but when you have kept bees forty years and tried all sorts of things and there is such a pile of lumber in the packing boxes, you get tired of so much material; it is expensive, it gets out of shape and it is not pleasant to have around. Some beekeepers who are very careful and put everything under shelter succeed in that way, but we have found it much more profitable to pack our bees in leaves every fall and carry the leaves away in the spring. However, there is such a thing as poor packing, when the packing is loosely done and the hive is almost unprotected, but if the leaves are well packed around the hive, with the front open and the roof on top, I believe we have as good packing for our locality, for our conditions of wintering as we can find.

Mr. Coppin—Do you pack each hive separate?

Mr. Dadant—Separately, yes, each hive by itself.

Mr. Coppin—I have a little different way of packing mine. I pack them in clumps of either 6 or 12. My hives are in rows, one facing east, and the other facing west, and I place them up, back to back, the back of each hive about 5 inches higher than the front. All this is on a 6 inch stand. I lay a board on the ground in front of the hive, resting on the ground, and the back of the hive resting on the stand, and the other one the same, on the back of it. Then the covers are slightly wider than the hive, they telescope, like Mr. Dadant tells. There is a space between the hives. That space is packed with leaves or straw and also the space in the back of them, at the tops. That does not take a lot of packing, because they protect one another. Then I have a piece of roofing paper that I put over the top. I have either 6 or 12 in the clump and it requires a board over that clump. It does not take much lumber.

Mr. Dadant—Are they moved from that spot, or left all summer?

Mr. Coppin—Yes, they are moved. I have to move them back because I have the roadway behind them. They are just about half a yard apart in the row, so I do not have to move them very far together, or very far back. They are not very far apart. That is the easiest way I can pack mine.

The Secretary—Does the wind affect them, do you suppose?

Mr. Coppin—I have not proved that. But I can protect them, as Mr. Dadant said. I can place boards in front of them, and I could let them out on fine days. I think that would be a good idea, to keep them boarded up to keep the wind away.

Mr. Kildow—You have pretty fair protection from the wind.

Mr. Root—Mr. Dadant touches on a point that we have often had in mind. There is nothing more distressing than to have the workmen leave packing material scattered all over the yard. That is one serious objection to the quadruple case. We are using the single wall hives under one shed, using all the different hives side by side. Our men are taking the double wall hives, having them close together, pile corn stalks around them, I think they have loose boards enough to keep them from getting away. One trouble with the quadruple is to get it away at the end of the season. The other difficulty is, after packing the bees, they are so used to the great big quadruple hive that we have serious trouble with drifting.

Mr. Dadant—I do not want people to think I am trying to tell what you should do. I simply want to tell you what we do and why we do it. Why do we use leaves? Because all our apiaries are right in the woods, the leaves are right under you, it does not take much trouble to get leaves and pack the hives.

The Secretary—Why can not the hives be brought in and put back on the same old stand?

Mr. Dadant—You have two hives some distance apart and then another one further on, bring those two hives together or four hives together, you change the location of them. The moment the hives

are moved 6 inches, the bees are lost, they begin to look around.

The Secretary—Do they drift before you can get them back?

Mr. Dadant—They drift at any time after they are moved, at least that is our experience. That is why we pack them on the spot Our leaves are there, and all we need is a piece of chicken netting six or seven feet long and we wrap that around the leaves. If you do not have leaves, use something else. If your hives are all close together and near a straw pile, pack them in that. We have our hives 4 feet apart, so we can walk around without disturbing the other colonies. We do not like to move them on account of drifting. It is simple enough to fill a cap with leaves, put the straw mat on the frames, then the cap with leaves, and fill that netting and put it around the hives, with the front open so they can fly any time that it is warm. The front is always south, or nearly always.

Mr. Bowen—We have listened to a great many wise remarks from wise men throughout the State on how to take care of bees. I think that the average person taking a single wall hive with a wind break and plenty of stores, will have just as many bees working next spring as the man who goes to so much trouble about packing and all that.

Now as to putting the absorbing packing on the top, that may be a good idea, but when it absorbs the moisture, that freezes when it gets cold and it takes time for that to thaw out. There is nothing better than dead air, if we can get it.

If the moisture is not there it will not freeze. If you give your bees plenty of ventilation, the moisture will not remain there. The principle of ventilation is, as the air gets warm it rises, and when it gets cold it drops. As the air goes up from the cluster of bees to your honey board, or whatever you have above, and as it cools it draws up to the side of the wall and then down again, and you have complete circulation. In forty-odd years I have never had one single hive ice-berged, and I have not paid very much attention. I usually have a sealed top. As to the matter of putting on your absorbing mat, whatever it is, I do not think that is any benefit at all. I do not like to put my judgment against the wise heads of the State, but if you take a single wall hive and give it a good wind break and plenty of stores, your bees will come out in the spring ready to do business, as quick as any other way you can fix them, and less expense.

Mr. Root—Whaf part ot the State do you come from?

Mr. Bowen—Right down here, about 33 miles west of this, same latitude as this. One winter, when both Brother Stone and I started in with 65 colonies, he lost all but five and I had lost only five. That was the same latitute, only a few degrees difference in temperature, I suppose no more than two degrees at any time. Now then, it is only a matter of opinion about working those things, and after we have heard all this talk, I think we will go home and do just as we please.

The Secretary—I want to help out his theory. The eight that I had left were very light below, and I had left on the extracting frames, full story on top and those eight were the only ones that went through and they were the only ones that had those frames on top, I left the honey for them to eat. Those went through all right. They did not have any packing, they just had the benefit of the dead air in that super.

Mr. Dadant—What percentage did you lose?

The Secretary—I lost 80 per cent, sixty colonies. Only eight or nine were left. I have got back to 40. I am not increasing, but I want to say in regard to the shed, I have always had my bees in the shed. The shed runs in this direction, southwest and northeast and they face the southeast the back of the shed was a tight board fence, the roof running up to the front, and it got in the way, when I would tier my hives up, I had to have a board along this way to put the roof on, and this got them considerably out of the weather. But I got so that it was too much trouble for me to get under there and lift them off, and I set up a derrick. I put a box on the ground that is just as high as the board the hive stands on, and then I have a board about that wide, 6 feet long, and I lay it on the box and then I raise the hive enough to shove the board under; then I raise the hive again enough to put a broom handle under, and roll it out without any trouble. Then I use the derrick to suspend the case that has the honey in it, raise the honey while I put the bee escape on, and let them down. In that way I can go and lift them off easily.

Mr. Dadant—Did you have them under the shed when you lost 80 per cent?

The Secretary—Yes, some of those that I lost were under the shed and some of them were out on the stand.

I think the greatest proportion of those that lived were under the shed, but the

dead air space in the covers or the supers was what saved them.

The President—It is very easy to account for Mr. Stone's loss, and that is that those that came through had double tier supers; they had plenty of stores, the honey was deep and the top of course was not so well sealed as those where the super had been taken off. Those that did not have sufficient ventilation and sufficient stores were the ones that died. Where you have cloth on the top super, I have never seen a super that was so tight but there was ventilation between the super and the body of the hive and the corner. That accounts for the fact that the bees where they had the super came through and the others did not.

I am speaking for this latitude and I am speaking for the large hive. Many of you have been to my place, you have seen my orchards, and you have seen my apiaries and you know the work I am doing. My object has been always to get the greatest results with the least expense. Why go to all this expense getting extra cases, moving colonies and all that, if you can accomplish the same thing with the hive on the place where it has stood 40 years without moving it? That is what I am doing. I have tried this, that, and many things and I finally came to this conclusion, that to winter bees safely, to carry them through the winter, as they should be carried, we have to have plenty of stores and good stores, the better the stores the better they will winter. Then see that you have plenty of young bees; so as to carry your colonies through the winter. Then pack your bees as has been mentioned, or in some similar manner, so that the vapor of the bees will be carried away and not condensed in the body of the hive, and then have wind breaks, you will succeed very well. Last year I gathered 42 barrels of honey from two apiaries, besides grapes and apples and all that. I see to it practically myself, with the exception of extracting and picking the fruit, etc.

A Member—You speak of having plenty of stores, what do you consider plenty of stores?

The President—I would want not less than 30 or 40 pounds of honey. Mr. Root, what would you say?

Mr. Root—I am interested in what this gentleman said over here. I do not quite understand his locality. You have a splendid wind break, must have.

Mr. Bowen—No, one of our apiaries is right on the banks of the Illinois River, where the wind comes down the river, and the first place it strikes, I believe, from the north pole, is our bees. Our hives are square, they are the same size one way as the other.

If there is any honey put out in the country, we usually have it. I do not believe in small hives. Some years ago a party met me and said, "Mr. Bowen, the great trouble with the hive you use is, it is too large, the bees cannot fill it." He had no more than got through when a man stepped up and said—One of them had been talked to by a scientific man who was coming into the niehgborhood raising bees, using the 8-frame hive. Winter came on and this scientific man with the 8-frame hive lost every one of his bees, and we lost one.

From our past experience I will say, when spring comes, we will have as many bees in proportion as you people with your thick wall hive. When you get a thick wall hive, 6 inches thick, when it gets cold weather that gets cold all the way through. Dr. Phillips told us that in his experience he found that the tight hive got just as cold inside as on the top of the hive. There is one disadvantage, when there comes a warm day, the warmth does not have as much effect on the thick hive as on the thin hive, and the bees in the thin hive will be out taking their flight, when the thick hive is not stirring. Unless we see something that will convince us the other way, we will continue to use our thin walled hive with a winter protection made of wrapping paper, and it is a whole lot less trouble than to move your hive back and forth. We keep our bees about six feet apart, center to center, in rows, and then the rows 12 feet apart.

Mr. Root—How cold does it get? There must be some explanation. What I am trying to get at is, how many days of sunshine do you have in your particular locality?

Mr. Bowen—Mr. Stone may say how much they have down here and that is the same as we have down there.

Mr. Root—What would be your guess?

Mr. Bowen—Well, take the ordinary winter, I would not think there were over ten days to two weeks, never more than four weeks, that we did not have a flight.

The President—Not last winter. The winter of '84 to '85 there were six weeks when there were no flights at all; 39 below zero.

Mr. Bowen—I think there were three days in succession that the thermometer was below zero.

Mr. Root—How many lost that winter?

Mr. Bowen—I do not think I had any.

I like to hear the opinions of different ones. After we have heard all this, as I said before, we will go home and do as we please anyway.

Mr. Secretary—I should like to ask Mr. Dadant if he ever tried the packed hive and the unpacked hive side by side?

Mr. Dadant—Yes, certainly. I want to cite the experience of one man, he is dead, but his experience is wonderful, S. N. Black. He was at one time president of this Association. He usually came to every meeting. He kept his bees in unpacked hives, more or less in the wind. One winter he lost all but 6 or 8 hives. He said he knew exactly how to winter bees, but there was no use trying to winter them safely in Illinois.

Mr. Bowen—I remember Mr. Black, and I want to say, furthermore, he told us here on one occasion in regard to keeping bees, that one of his hives got upset by a cow, so that it laid over on the side through very cold weather and he expected to lose those bees, but they came through all right.

The President—He never packed his bees, and that is why he lost them.

Mr. Bowen—This one hive was exposed and it went through all right.

Mr. Dadant—That is all right, accidents will happen. If you think they will winter that way, trot along.

Mr. Bowen—I am not in favor of upsetting a hive, but I am not in favor of going to so much trouble in packing, as you suggest, and when I find that I can keep more bees by doing that than not packing, I will change over.

The President—Why not pack from the hive? I pack ten colonies per hour. Is there anything faster or cheaper than that?

Mr. Erbaugh—incidentally I might mention that at the Michigan State Apiary, the apiary is square and around it in each of the corners we have quadruple packing cases, government packing cases, like I mentioned. The colonies in those produced nearly two supers of extracted honey this year, the colonies outside of the square that were not packed in those cases, although some of them were double walled hives, produced just about an extracting super less honey. That is an instance. Now, there must be something in it. I would not be so enthusiastic over packing if I had not seen that.

The President—There may be something in the queen.

Mr. Erbaugh—Same breed of bees altogether.

The President—That does not make any difference. Packing does not always account for the success.

Mr. Erbaugh—Positively no. If you requeen a colony at the proper time and do not pack it, and pack one that has the old, degenerate queen, your young queen will probably come out better than the packed one. But that is not a true example.

In this case we had about 16 colonies packed and a little less unpacked. The sixteen colonies averaged just about a super of honey larger than the others. Those colonies were treated as nearly as possible the same. Of course we did not just exactly see that they had the same kind of queen, or the same brood and all, but the comparison goes to show the effect, I think.

Mr. Bowen—It might be well enough to pack bees up in Michigan, but the system I was speaking of is down in God's country.

Mr. Erbaugh—My experience was down in Peru, Indiana, just about due east of here, and about the same conditions as here. My father, if he had a weak colony, would pack, he did not want it to die, and they would probably go through where a strong colony might die. Now, was it the queen or the colony, or what was it?

The Secretary—Last winter was a very severe winter, you will remember there were a great many cold days, at least with us, and my bees packed, as I said, with leaves in the top, these slotted boards in the half-story super; they came out so strong that I had a swarm of bees the fifth of May, and the hives were just covered with bees whenever there was a warm day. I was afraid they would swarm themselves to death before May ended. In fact, I did not feed them anything, for I knew the fruit bloom would pass and that they would be getting plenty. Then I began feeding them something to keep the stores up, to keep the breeding going on, and those bees were strong all the time from early in May, and wintered that way. I do not think anything will beat that.

The President—I have understood that the production of honey by any apiary or any special colony is a prima facie evidence of good packing. There are other considerations to be taken into account. The time to tell about the packing is when you unpack the last of April in this latitude, or the first of May, you can compare your colonies, you can see the strength of different colonies, the amount of brood, the amount of stores they have consumed, and that will tell you the tale about packing. But when you go on to the last of June and compare results as to the production of honey, that is quite a different tale. I can take a colony that has come through the winter in very poor shape, if that has an

extraordinarily good queen, the colony may be very weak at unpacking time, but yet I can build up that colony, if the queen is the right kind of queen, and produce more honey than any other colony that I have on the place. I have done it, time and again.

Another thing, that is a question I am asked at these meetings, if you take those colonies and move them from one apiary to another, those colonies that you move will be the ones that produce the most honey. You can put them side by side with other colonies that you do not move, they will be no stronger than the ones that you left there and yet when you come to count up the results, the colonies that you move are the honey producers.

Mr. Root—I am interested in what Mr. Bowen says. I want to know why he should have had that experience. I find paper around the hives is a good thing, but I have also found that more packing is better. My experience is, as Mr. Dadant says, almost every year we have hives with the single walls. As a rule those colonies are so weak that they are good for nothing. We watch them in the spring. I have had numbers of those single wall hive colonies, good colonies, and we lose them every year. But I find this, year in and year out, that the unpacked colony without the paper, is either very weak or very bad. Some of them pull through, because there are always exceptions to prove the rule. I believe they have more sunshine.

Mr. Bowen—Excuse me, I say there were some that we never put the paper on.

Mr. Root—That is worse and more of it. Our experience is exactly that of Mr. Dadant; our colonies that are packed are so much better in the spring than those without it. It is a little dangerous to let the dogma go out that it is safe sometimes not to pack.

I have not any silk hat. Dr. Miller used to say, "I would like to bet Mr. Bowen a silk hat that if he packed some of his colonies and not pack the other, if he did not find his packed colonies in considerably better shape, I will buy him the best silk hat he can get in Chicago or anywhere else.

Mr. Pellett—There is one thing you ought not to lose sight of in these discussions about the unpacked colonies, and that is the fact that while the colony may go through the winter, it is so much weaker in bees. It is important not only to save the colony, but to save just as many bees as possible, and I believe, from my limited experience, that the packed colonies come through at least 25 per cent stronger in bees and yet, as these gentlemen said, there are some very extraordinary cases. For instance, last spring I bought some colonies and put them in old hives that were so rotten you could practically put two fingers through the top of the cover and those bees were all right, in spite of the hard winter we had last winter.

The President—There was plenty of ventilation. They were open to the weather.

Mr. Bowen—One thing ought to be taken into consideration about this going through the winter. I believe bees ought to take their flights every ten days or two weeks and they will winter in better shape than those that do not go out. Where you have those thick walled hives they are not so apt to fly.

You remember Dr. Phillips told us of his experience, that the packed hives got just as cold as the other but do not warm up so quickly.

The President—I will say this further, that my chaff hives come out in the spring stronger in bees, they consume less stores, have more brood than my double wall with dead air space, or my single wall with dead air around them. I have less colonies in proportion in chaff hives than I have in the other hives.

Mr. Coppin—Mr. Bowen's argument will hardly hold out. He says we know that the double wall hive will not warm up as quick. If it will not warm up so quick, it will not get cold so quick. I have noticed in the bulletin from Washington they recommend wintering in the two story hive.

WEDNESDAY EVENING SESSION.

The meeting was called to order at 7:30 p. m. in the banquet room of the Leland Hotel. The Vice President, Dr. Baxter, in the chair.

The Chairman—Ladies and gentlemen, we are very fortunate to have with us this evening Mr. Frank C. Pellett of Iowa.

Mr. Pellett—When a country is as large as this, there is a great range of conditions, a wide difference in methods of manipulation, stores of honey and general practice. The methods that are adapted to the north are not adapted to the south and one has to have a quite extensive observation before one can appreciate how much of the bee-keeping industry is capable of being expanded, how much of a business it may become. You know here in Iowa and Illinois, where you and I live, most of our people are so busy raising corn and hogs that they have never thought it possible that such an insignificant creature as a

honey bee might add anything of any great importance to the State resources, and we find the general public is very much surprised some times to find a man can make a comfortable living and provide for his family from bees and do nothing else.

I have been fortunate in the last few months in being able to visit a great many of the leading bee-keepers from Canada to Georgia and west of the Rocky Mountains, part of these trips being for the American Bee Journal. I took a great deal of pleasure in taking my camera with me and taking different things that might be instructive and interesting in different sections of the country and incidentally I brought in some pictures showing the interior of a hive and life of the bee, and these conditions, though they are very familiar to most of you, yet there are in nearly every audience those who are just beginning and who want to know more about the fundamental principles of bee-keeping and there are those who are interested as a matter of general information rather than from a practical standpoint, and so I will show you a few slides that I have prepared.

(The remainder of the lecture was illustrated by slides.)

THURSDAY MORNING SESSION.

The meeting was called to order by the President at 9:00 a. m.

The President—The first thing this morning I want to say that last year there was appointed a very important committee that we have overlooked, so far it has made no report and as chairman of that committee I think I had better make that report, that is the Legislative Committee, consisting of myself as chairman, Mr. Stone, our Secretary, Dr. Baxter, our First Vice President and Mr. Kildow, the State Inspector.

We went before the Legislative Publicity Committee last fall and made our request for appropriations for the State Society and also for the inspection work and then we were called before the Appropriation Committee of the Legislature, some time in February I think it was and we gave them the facts connected with the requirements for both the State Society appropriations and inspection work and the facts which we gave them were very well received, and they assured us that we would get our appropriation, which we did. Then we were called before the Governor in March some time, also in regard to the appropriation and the inspection work, and the Governor gave us to understand that he would appoint no inspector of apiaries without consulting the State Association, which promise he kept. Now, that committee ought to be continued. There probably will be no meeting of the Legislature this winter, but it is well to have a committee, and I will reappoint that committee with this change, that instead of myself being chairman, we will make Dr. Baxter chairman of that committee. The Legislative Committee will be: Dr. Baxter, Chairman, James H. Stone, A. L. Kildow and E. J. Baxter. Now, then, we have committees to report. How about the Auditing Committee, are they ready to make their report?

Mr. Kildow—I move that the report be accepted and the committee continued.

The President—You have heard the motion that the report of the Legislative Committee be received.

The motion was seconded by Dr. Baxter and carried.

The President—Now, then, if the Auditing Committee is not prepared to report we will receive the report of the Committee on Resolutions. Is that committee ready to report?

REPORT OF COMMITTEE ON RESOLUTIONS.

Whereas, The production of sweets is more and more necessary to the sustenance of the human race,

Whereas, The production of sugar has decreased while the demand is increasing,

Whereas, Honey is the best and healthiest of all sweets, being a direct product of nature, and growth and encouragement of bee-keeping are in the line of indispensable requirements,

Therefore Be It Resolved, That we heartily approve of our State Association exhibit at the State Fiar, especially the public extracting of honey, as it educates the people to its value, and that we earnestly urge the continuance of this, and its extension.

Resolved, That the continuantion of the work of apiary inspection is urgent, that its extension to all parts of the State should be carried on, and that a sufficient appropriation is necessary to cultivate the growth of bee-keeping and make the production of honey more extensive than ever, as honey often wastes in our fileds for want of bees to harvest it;

That we urge the State University to extend the teaching of bee-keeping and to make this a special department of agricultural education.

Resolved, That we extend a vote of thanks to the Leland Hotel for the use of their sun parlor and also for the use of their meeting hall.

J. W. NEWBURN.
A. L. KILDOW.
C. P. DADANT.
Committee.

Dr. Baxter—I move the adoption of the report.

The President—You have heard the report of the Committee on Resolutions. It is a partial report. The motion has been made and seconded to adopt the resolutions as read. Are you ready for the question?

The motion is carried.

The President—If you have any further resolutions, we will have them later.

REPORT OF AUDITING COMMITTEE.

On motion, the report of the Auditing Committee was adopted.

The President—Is there any other work that has not been done? Are there any other reports? If not, we will proceed to the election of officers. The first thing will be nomination for President.

Dr. Baxter—Mr. President, we have all been satisfied with your work, and I place in nomination for President E. J. Baxter. (Seconded.)

The President—I thank you, Doctor. I have served several years and it is not possible for me to serve any longer. I have too much work at home and I cannot give the office the attention it requires, so I wish you would excuse me.

Mr. Dadant—We certainly have been satisfied with Baxter and if one Baxter does not want it, we will nominate another Baxter. I place Dr. Baxter in nomination.

The nomination was seconded by Mr. Kildow.

The President—Are there any other nominations for President?

Mr. Kildow—Move that the Secretary cast the ballot for Dr. A. C. Baxter as President.

The motion was seconded by Mr. Dadant and carried and the ballot was cast accordingly.

The President—The next thing will be the Vice Presidents, five in number. The usual method has been to vote for five men and the five receiving the highest votes will be vice presidents in their order. I will appoint Mr. Kildow and Mr. Newbern as tellers.

A ballot was taken and the following were declared duly elected: First Vice President, Mr. King; Second Vice President, Mr. Heinzel; Third Vice President, Mr. Winthrow; Fourth Vice President, Mr. Williams; Fifth Vice President, Mr. Coppin.

The President—Next are nominations for Secretary. (A motion was made that Mr. Stone be elected.) It was moved by Mr. Laurie that the nominations be closed, and the President cast the ballot for Mr. Stone, which motion was seconded by Mr. Dadant and unanimously carried.

The President—I hereby cast the ballot of the Association for Mr. Stone as Secretary for the ensuing year.

The President—Next will be the selection of the Treasurer. Whom will you have for your treasurer?

Mr. Heinzel—I nominate Mr. Becker.

The nomination was seconded by Mr. Dadant and a motion by Mr. Troutner that the Secretary cast a unanimous vote for Mr. Becker for treasurer was carried and the ballot was cast accordingly.

The President—Ladies and gentlemen, This association has existed a long while without an official seal, which is against the law. We had a copy of the seal presented yesterday. I suppose you have all inspected it. Now, what is your pleasure about it? We must have a seal. It is very strange to me that the auditor pays any of our bills without being officially sealed by the Secretary.

The Secretary—We tell him we do not have any and that ends it

Mr. Dadant—Every deed has a seal. We just scratch it with a pen.

Mr. Troutner—Move that we adopt the seal that is drawn on the paper.

Dr. Baxter—Mr. Dadant and I talked this seal over last night. There is a bee here in the foreground that would be bigger than the hive, could not possibly get into the entrance, so we thought we would like, with that bee off, to change it around a little and the word seal might come in there, although if this is designated in the place for the seal, it is not necessary.

Mr. Dadant—I want to add one more word. The word seal reminds me of a village where the people were so green that you had to mark chairs "chair to sit on." It is the same thing if you mark this, "seal", it means that we do not know what that thing is for. It seems to me that we have intelligence enough to know that that is a seal without having it printed on. In regard to the drawing of the cells, we want them to look as the bees build them and therefore the edges of the cells should be slightly rounded. The bees always finish their cells, strengthen them,

put a rim on the edge. Anybody who has handled bees will think that it looks odd to see a cell with a sharp edge. Otherwise I think this is very good.

The President—I would recommend that a motion be passed to adopt this seal and make our incoming president, Dr. Baxter, a committee of one to attend to the matter and remedy this drawing as may be necessary. If that meets with your views, I would recommend a motion to that effect.

Mr. Troutner—I move that we adopt the seal, with whatever alterations may be necessary.

these certificates, or leave it to the Executive Committee?

A motion by Mr. Kildow that the matter be left to the Executive Committee was seconded by Mr. Dadant and carried.

Dr. Baxter—I have a telegram I would like to read which has just been handed me.

WASHINGTON, D. C.
November 15, 1917.

Illinois Bee-Keepers Assn., Leland Hotel, Springfield, Illinois.

Need for honey in nineteen eighteen is exceedingly great urge every bee-keeper present to care for his bees now so as to have bees for a big output next year.

PHILLIPS.

DR. PHILLIPS.

The President—You have heard the motion, that we adopt this seal and that we appoint Dr. Baxter a committee of one to see that the alterations are made.

The motion was carried.

The President—There is another thing in regard to the certificates for these exhibits that we have requested to have made and have not been made. May be in the future we may have an exhibit. What is your pleasure? Do you want to adopt

A motion by Mr. Dadant that the telegram be received and placed on file was seconded by Mr. Troutner and carried.

The President—I believe that that concludes all of our routine business unless there is something else that has been neglected.

We will now have a paper by Mr. C. P. Dadant.

THE PROPER SPACING OF FRAMES.

(C. P. Dadant.)

The question of frame spacing was called to my attention in the summer of 1916, by Allen Latham, when he remarked, at the Connecticut meeting, at Storrs, that the 1 3-8 spacing of combs, from center to center, is the greatest promoter of swarming.

C. P. DADANT.

The 1 3-8 spacing of brood combs, from center to center, has been practiced for years, on a large scale, since practically all the manufacturere of bee hives use this spacing. They certainly investigated fully the opinion of many of the educators as well as that of the practical bee-keepers before they adopted this standard. But there are differences of experience even among the best authorities.

If we go to nature and examine the naturally built combs, in logs, gums or box hives and skeps, we find that unless a guide has been given—and this would no longer be natural—the bees build their combs at varying distances from each other; in some cases the combs being built so closely that there is not room for brood and the bees have to use only one side, while in other cases and especially when honey storing is in progress, the combs may be built two inches apart and even further.

Dzierzon gave 1½ inches as the right distance, from center to center. Berlepsch and others disagreed with him and proved that, in a majority of cases, the brood combs were built 1 3-8 inches apart. Following these masters, our early teachers. Langstroth and Quinby disagreed. Langstroth made his 10-frame hives 14 1-8 inches wide inside, allowing for each frame a fraction over 1 3-8. The spacing of 1 3-8 would require only 13¾ inches of room. Quinby accepted the Dzierzon spacing of 1½ inches. Adopting the Quinby system, we adopted also the Dzierzon spacing of 1½ inches. In our revision of Langstroth, we advised the use of this spacing for two reasons:

1. It facilitates the removal of the frames, giving a little more room to handle them, and thus aids in interchanging combs

which may have slight irregularities. Of course with the use of comb foundation there is now very little irregularity in combs. Yet I have often seen bee-keepers who use the narrow spacing crush bees in removing combs from the center, on account of the narrowness of the space.

2. It gives more room between brood combs for the bees to cluster in the winter, and a greater thickness of honey above them, therby placing the bees in better condition for winter. Strange to say, this point which we considered as a benefit was looked upon as a detriment by Mr. Julius Hoffman, inventor of the Hoffman frame, who wrote:

"If we space the combs from center to center 1½ inches, instead of 1 3-8, then we have an empty space of 5-8 inch between two combs of brood instead of ½, as it ought to be: and it will certainly require more bees to fill and keep warm a 5-8 than a ½ space. In a ½ inch space, the breeding bees from two combs facing each other will join with their backs, and so close up the space between the two brood combs. If this space is widened to 5-8 the bees cannot do this, and more bees will be required to keep up the needed brood-rearing temperature. What a drawback this would be in a cool spring, when colonies are still weak in numbers yet breeding most desirable, can readily be understood."

So it will be seen that, although we agree with Mr. Hoffman upon the fact that more bees will have occasion to cluster between the combs with wider spacing, we disagree upon the effect this will have on the success of the bees.

In commenting upon this, the "A B C & X. Y. Z of Bee-keeping" remarks that:

"Where wider spacing is adopted there is apt to be more honey stored in the combs, and less of worker (but more drone brood). Close spacing 1 3-8, on the contrary, tends to encourage the rearing of more worker brood, the exclusion of drone brood and the storage of less honey below."

We agree with this also, but we disagree as well on the ultimate effect upon the bees. We believe that a thick comb of honey where the cluster is located for winter will make for better wintering, even though it may mean a little less honey in the sections. As to the building of drone comb and rearing of drone brood in a wider space, it is of no importance when we use full sheets of comb foundation, or when we take pains to remove the drone comb in early spring to replace them with worker combs as it should be done by energetic bee-keepers.

But until the summer of 1916, when the writer was in New England attending the bee conventions, we had never given a thought to the possibility of this spacing having any influence upon the swarming instinct. But Mr. Allen Latham, who is a wide-awake apiarist and who has tried both wide and narrow spacing, when he made the remark to which I referred at the beginning of this address, gave a very important item on the subject of swarm prevention. In an 8-frame hive, the wider spacing increases the room during swarming time one-eighth inch between all the frames. In other words, an 8-frame hive has 8 spaces or the equivalent of one whole inch of additional ventilating and clustering room of the height and length of the hive body. This amounts to about 160 cubic inches of additional space. This suggestion was a revelation to me. I often wondered why our method of swarm prevention was so little successful with others who used 2-story 10-frame hives or 2-story 8-frames. We had never given any thought to this point. Yet the wisdom of Mr. Latham's contention is very apparent. In summer the bees are overcrowded in their quarters, and they often have to cluster on the outside. Clustering space on the inside, more ease of ventilation, both tend to remove a part of the pressure. If conditions are otherwise favorable, the hives with the wide spacing will have less swarming than the others.

When it comes to a consideration of comb spacing in the supers, we find less disagreement. Our old master, Mr. Langstroth, placed 9 frames instead of 10, in the upper story of a hive measuring 14 1-8 inches in width, therefore giving nearly 1 9-16 inches for each frame. Our leaders in the production of section honey began with sections 1 7-8 inches wide and this size is still the standard. In our own practice, we use only 10 frames in a 16 inch super. Mr. Baxter, President of the Illinois Society, who is a very successful producer of extracted honey, uses only 9 frames in his 16 inch super. This gives 1 25-32 inches for each comb.

As I prepared this address, I received a letter from a Vermont apiarist whom I met when this question of frame spacing was uppermost in my mind. I had urgently advised him to use large hives and wide spacing. He now writes me as follows:

Arlington, Vermont, *October 10, 1917.*

Mr. Dadant.

Dear Sir: Probably you have forgotten me and the pleasant day we had at Mr. Crane's last summer, in Middlebury, but

I have not. I have had another pleasant summer with the bees and got nearly 2,000 pounds of honey from 15 colonies, spring count, 1,500 extracted and 500 pounds of comb. My best colony gave me nearly 400 pounds of extracted honey. I had only three swarms and they all went back.

How did I do it? By following your wise suggestion, of wider spacing of frames, with plenty of ventilation and abundance of super room.

To get wider spacing—mine being all 10-frame Hoffman-frame hives, spaced 1 3-8—I just pulled out one and divided the room between the others. I wonder whether I can succeed again. But I feel very grateful to you and the Journal for the advice you gave me.

C. H. CROFUT.

This man is not the first man to use the method of keeping one frame out of the 10-frame hive. It has been tried before. I believe that, as a rule, those who have tried it may not have been displeased with the results. However, the use of only 9 frames in a hive gives just that many less cells for the queen to lay. But nowadays, when so many beekeepers are recognizing the necessity of large brood chambers for the breeding season, there is a tendency to use two stories for breeding, especially when extracted honey is in prospect. So the standard hives, as manufactured, do not need to be discarded by the man who wishes to try wide spacing.

Not a few words as to the greater number of bees required in spring to keep the brood warm, when wide spacing is used. I do not wish to minimize this requirement. But my experience, with very large hives, indicates to me that powerful colonies that have had the benefit of the wide spacing during the season, have avoided swarming, have placed more honey in the center of the brood chamber and have been in better condition to winter. They are, therefore, usually, enough stronger in the spring to be able to take care of the brood, in spite of the additional space, and reach honey season in better condition than the colonies with the narrow spacing.

One more word. While I believe I find 3 points of advantage in the wide spacing of frames as follows: More honey in the center for winter; more room for bees to cluster in the same space and a less tendency to swarm; yet I do not wish to be understood as holding this point as infallible in reducing swarming. A number of other conditions have to prevail, in order to avoid swarming and the spacing of frames is only one of them.

In giving you these arguments, I do not wish to set myself up as a teacher, or to claim infallibility. In fact I must insist upon the statement that the principal advantage of wide spacing, swarm prevention, was entirely overlooked by us until Mr. Latham incidentally mentioned it. But it explained to me one of the reasons of our greater success in this direction.

The older I get, the more I perceive that what we know is but a grain of sand on the shores of the ocean of the unknown. Or, as Josh Billings remarked: "What's the use of knowing so much, when half of what we know ain't so?" I never attend a bee-keepers meeting without recognizing the truth of that joke; for many things which I thought I knew prove to be falsehoods. When I think I have some wonderful discovery to disclose, I find some stranger who discovered it long before I did.

The only thing one can do, in addressing a convention of specialists, is to call their attention to some particular subject in the hope that they may discuss it and sift the arguments on both sides thoroughly. The greatness of America comes from the impartial way in which every one is given a hearing and the best methods are selected without regard to routine, former custom, or the source of the information, provided it contains useful points. It is the amalgamation of dozens of races of men united under one flag and seeking progress without restrictions that is producing the hardy nation that we have been in the past and that we hope to remain.

DISCUSSION.

Mr. Root—One of the prime reasons why I came to this convention was to hear that paper. I will tell you why I am interested. We have two automatic machines that turn out 180,000 frames a day and the spacing of the end bars at the present time is 1 3-8 inches. I will quote what Dr. Miller said when we discussed this question. He said, "I am kind of afraid those miserable Frenchmen are right." You all know Dr. Miller, I think there is no one in the world that he thinks more of than the Dadants, but that is his way. He would say the same thing of me. Well, I am afraid Dadant is right when it comes to the spacing. Now, then, these frames are going out, 180,000 a day and if many are going to adopt these ideas, I wonder what is going to happen. I went to see Mr. Allen Latham and I said to him,

"I want to see those hives that will not swarm if you let them go a year, which you say will produce honey for a cent a pound." He said, "All right," and we went out and we came to one apiary and I said to the man, "How often does he come around?" "Well, usually once a year." I wanted to find out if it was a fact that he went to see those bees only once a year. I said to Mr. Latham, "Have you been here before?" "No." I said, "What do you expect to find among those hives?" "Well, we will go down and see."

I found those hives were made out of shredded wheat biscuit boxes. They were, I should say, about 4 feet long, about 18 inches square. Talk about big hives, I never saw anything like them. There they were, full of honey and full of bees, had not been examined for a year. The bees met us more than half way when we got there. They had not been handled at all. I said, "Now Mr. Latham, you said an inch and half spacing." He said, "Well, pull your rule out and measure it." I did and there was an inch and a half spacing. He said, "I regard inch and a half spacing as very important."

Mr. Allen Latham is a quiet mannered man, does not care whether you agree with him or not. He is professor of Natural Sciences in the schools there, a very close observer, and after I saw those big hives in the bushes, the entrance covered up with grass and weeds, it did not make any difference, he did not go near them, I said, "Why don't you go to them a little oftener?" "Why, it is not necessary." "What do you do to prevent swarms?" "There are no swarms at all," he said. I would not know there were any bees there at all. The bushes had grown all over in such a way that you would not see there were any hives and we had to push the bushes away before we got at them. Well, I came away very much obsessed with the felling that the inch and a half spacing was about the right thing. I came back and talked to our people about it. "What are we going to do? If we make the change, from 1 3-8 to 1½, we will get into trouble with the people who have used the other." Fortunately the standard hives put out by the manufacturers are wide enough to take inch and a half spacing and as a matter of fact a Hoffman frame that has been in use for awhile will have nearly inch and a half spacing. I was struck with that when I came to examine some of the hives and the only question that comes up is that when the bee glue comes in there it sticks and cracks and breaks off. Mr. Dadant does not use Hoffman frames, at least not a large number of them.

I will say, I am responsible for the Hoffman frame, in fact I introduced it on account of the unequal spacing in amateur hives. I saw they were spaced all the way from an inch apart, to as close as you could get them. It seems to me that the amateur bee-keepers ought to have something that they could not crowd together closer. So the idea of the Hoffman frame occurred to me, and it seems it is adopted now by all the manufacturers, our competitors included.

Now the serious question with me is, should those Hoffman frames be spaced an inch and a half to start on, making them a little wider after they have been in use, and I am frank to say I am a little in the dark. I will say again, I am afraid Mr. Dadant is right, that I ought to get into the band wagon before it is too late, that all the others will adopt that form of spacing.

I think I agree theoretically at least with all that Mr. Dadant has said. It sounds reasonable to me and I have been watching it for a whole year since he spoke on that a year ago and we are still considering it. I want in these general conventions to talk with the best bee-keepers and get hold of the fact as to whether the machines turning out the Hoffman frames should be gauged to a wider spacing, or left as they are.

Mr. Dadant—Since Friend Root has mentioned the visit to Latham and since I have given Latham credit for the idea, since he was the one that put it into my head, I do not think Latham, when he reads this, will be offended if I offer a little criticism. I spent two days with Allen Latham, he took me out in the brush and showed me the bees. Some hives did not have spacing of one and a half. He said: "There is only one fault in my mind with this hive, it has the 1 3-8 inch spacing and the 1 3-8 spacing is a great promoter of swarming." We had been telling the people that there is more room in the 1½ spacing for clusters and the more room to cluster means less swarms. I think any one will see that the more room the bees have the less will be the willingness to swarm. Friend Latham leaves his bees alone. I do not believe that if we give them 1½ inch spacing and leave them alone that that is sufficient. There are a number of things necessary to prevent swarming.

I criticized friend Latham as we went from one place to another. In one place he had only six colonies and in another a dozen. I said to him, "Why do you put so few bees in one place?" "Well, you go to open the hives and they go to robbing. When I have six hives, by the time the robbing starts I go to another place and they quit." I do not think that was as practical as the idea of the 1½ inch spacing.

I am not at all worried about this wider spacing, even with the standard hives. I think it is out of the question to change the standard hives. Why, thousands upon thousands of bee-keepers use those standard ten frame or eight frame hive, and to compel them to change, or to advise them to change would be a mistake. But you can put nine frames in a ten frame hive and then you have no trouble.

Somebody said with the 1 3-8 inch spacing the Hoffman frames have been so much better that they would not space 1½ any longer. I had a hive with Hoffman frames and I pulled out my pocket knife and whittled down the shoulders. I do not want a shoulder. But with the loose hanging frames you find people who crowd ten frames in eight frame hives. You find beginners, when they open the hive they push the frames back, when they close it they forget to pull them back so that they have a narrow spacing in one place and wide spacing in the other.

Mr. Kildow—Some people put the division board in the middle.

Mr. Dadant—All sorts of mistakes are made by beginners. My sons, who employ more labor than I do, send a man, an experienced man, to the apiaries, but in my case, I used to think if I did not go myself to the bees, the bees would be ruined. But when we got to where four of us were not numerous enough, I had to get over that idea. I had to accept the idea that when I died the bees would still live. I thought when I died there would be no more Dadant apiaries. That is not right. I think there will be good bee-keepers in our family after I am gone.

Mr. Pellett—I was very much interested in what Mr. Root said. I started in the first place in my bee-keeping career with the eight frame hive. I think that particular line of eight frame hives was made in the Root factory and they put in a division board which had no earthly use except for one thing, you could take the division board out and get a little better spacing. Before I got the division board out, with the eight frames in, they would plaster the thing up tight. They said, "Pull the division boards out and you will have plenty of room." But the difficulty was, you had to pull the division board all to pieces to get it out. I never figured out the purpose the division board served, an empty comb serves all the purposes of a division board. It is a better non-conductor of heat.

I finally discovered that the eight frame hive was entirely too small and I made the change at a considerable expense, to ten frame hives. Unfortunately, the ten frame hives did not have division boards. The spacing, as Mr. Root said, was a little more than 1 3-8 with the Hoffman frame, and if you get the ten frames out, you cannot get them back without adjusting, so I used generally 9 frames in a 10 frame hive, two stories high all the year around, which gave us 18 frames for the brood.

Mr. Dadant spoke of Dr. Miller's two 8-frame bodies, which he said was all that was necessary. I have worked at that plan in my own particular case, two 10-frame bodies with 9 frames in each, which gives 18 frames all the year and I aim to have them go into winter quarters with the upper one of those hive bodies practically full of honey, from 40 to 50 pounds of honey in each colony. That gives plenty, not only for winter, but also plenty in the spring in case conditions are unfavorable. I had not thought anything about that extra spacing having any influence on swarming and I have used some colonies in the yard with the two 10-frame hive bodies, same hive bodies with the full 10-frames in, and I am inclined to believe that those are the colonies that have been most inclined to swarm. I had not thought of it in time to place a careful check on it, but I believe that is the solution of the problem, wider spacing, because we for instance in one yard have possibly two or three hundred of those old old standard bodies, with 1 3-8 inch spacing. Now, if you give us a little wider hive body, a half inch wider, to get that extra space, then they will not fit the old ones and there are thousands of bee-keepers in the same fix. I would prefer the inch and a half spacing if I had it, but there is the question of making the change. I made one expensive change from the 8-frame hive to the 10, and I would hesitate of course to throw away that equipment. I think if Mr. Root comes to change his spacing, he will find a great deal of difficulty. I believe the principle is right, but at the same time I believe that 9 frames in a 10-frame hive body will pretty nearly solve the problem.

I was interested in what Mr. Root said about the Hoffman frame. I found in

Iowa a large number of our most successful bee-keepers using loose hanging frames, but I am glad that the hive he sells, to the ordinary purchaser who does not know what he wants, is the Hoffman frame. I have gone into the yards of people and I have found that where they have loose hanging frames they jam them all together in one side of the hives and on the other side there is a wide space. The Hoffman frame gets away from that. Personally I like the Hoffman frame because, in moving the hive, it is not so likely to slip together and cause the difficulty of having to space it over again. I like a self spacing frame.

The Secretary—I just want to say a word or two. If any members are here who renewed their membership at the Fair, they are entitled to a badge and we would like to have them come and get it if they have not done so.

Another thing I want to say, if you send your fee to the Secretary, do not expect that you will get your receipt by return mail. Your Secretary is a very busy man since labor, on the farm, got to be so scarce, and I have been on the farm this summer and am going to be in the cornfield this winter, so you must consider the circumstances. I often get letters asking if the report is not out yet, and maybe it will be in March or April, but they think it is going to get out right away. Our reporter this year is busier than she ever was, she could not be here and she sent Miss Jacobson and I am told that she is so busy for the next five weeks that we cannot look for our copy for some time. I think it will be March or April before we begin our next report, so that the bee-keepers must not be impatient. But some times a man does not get his report that he is entitled to, like the man that sent his dollar in, as I explained yesterday, and not a scratch of a pen to say where it came from. After holding the dollar a year we have to find out by correspondence whether he is the man or not.

We have got to leave here to go and have our picture taken at 11 o'clock.

The President—Just a few words in regard to the paper that has just been read and the remarks made. I readily can see why Mr. Root has adopted the Hoffman frame, but I cannot imagine how any practical bee-keeper would use such a contraption as that. (Laughter.) A man who takes care of his apiary and his hives as he should and looks to details, certainly would not have anything to do with that. Mr. Pellett's idea that he can lift the hives without tumbling the frames together; why, I have moved hives for miles and miles on a hay rack without springs, with hanging frames, never nailed them, and I have never had any trouble in that way.

Some of you who have visited my apiary, last year and year before, looked inside and saw conditions there. I do not see how any practical bee-keeper who produces honey can get along without the division board, unless his hive is so very small that he cannot use it to advantage, but I would get rid of the hive before I would get rid of the division board, get something larger. You who had big crops can afford to burn up the small hives and get something better. I would not hesitate to burn up my small hives, make a bonfire, and one season's crop would more than pay for new hives.

Now as to the spacing, I have always used the inch and a half. Mr. Dadant taught me 45 years ago and I have never had anything else, so I cannot tell of anything different, but I know what the results have been with me. I know I have had very little swarming. A year like last year, if I did not get the supers on quick enough, they swarmed, some times I had them four or five high, but it is very seldom that I have had swarms. It is only on occasions like that, when we have an extraordinary crop. Besides the spacing you have to have ventilation. I do not understand how any practical bee-keeper can get along without removable bottoms. I want to be able to raise up my hive to any height I want, so I can give them all the under ventilation possible, according to the requirements of the season, and when you do that and give them plenty of super room, I do not think there is any trouble at all with swarming. I hardly have any.

Mr. Dadant—I think perhaps there is in the location a little difference in the results. I think bee-keepers can make money, in fact I know they can, by the methods that have been advocated. In the hives we are using there is a guide at the bottom and we use the loose hanging frames without any shoulders. The Hoffman frame is held so that it cannot shake out. With a guide at the bottom holding the frames to keep them from shaking, there is much less danger of their shifting from one side to the other. That explains why Mr. Baxter can transport his frames when most of you think he cannot do it.

Another thing, I know we have, near the river the lowlands lots of cotton-woods and trees producing gum, and there is a great deal more propolis in the hives than in places on the prairie where there are only a few trees and white clover is plentiful;

bees cannot possibly get as much propolis as they do where there are trees producing gum, and one man located in a particular location cannot have any idea of what another one experiences in a different location. We sometimes have propolis over the frames so thick that it becomes unpleasant, but this is an advantage when you transport your bees and I think things of that kind explain some of the differences of opinion and the difference of methods. I do not want to urge that you change your systems, I simply explain what we do and how we do it and our reasons for doing it and that is all. Then you can draw your own conclusions. If you think it is worth while, it is not difficult for you to try the 10-frame hive with only 9 frames, but do not try on one hive only, because if you try one hive only, there may be conditions affecting that one hive that may not be true of others and then your experiment is a failure. You should try on a few hives as near as possible similar to some other hives which you have and with nearly the same conditions, then you can tell whether one is better than the other.

The President—I do not have a very good location. I have to depend upon white clover and some times heartsease and seldom Spanish needle. It used to be very much better years ago. I have no bottom lands.

I have never taken any surplus from fruit trees. On our prairies they have drained all marshes and swamps have been tiled all over our country, so that we have no wet places, everything is drained and it is very seldom there is any Spanish needle any where in the field. I do not say others cannot raise honey by other methods, because I know they do raise honey and some have just as much as I have, but if I can raise good crops in meager localities, if they use the same management, the same methods, why could not they double the quantity that they are raising? I think if they use larger hives, or double the Langstroth bodies, as Mr. Pellett does, so as to give the queen all the room possible so as to raise a large colony, that they would get a great deal better results.

Mr. Root—I do not want to take any more time. I would like to speak about that Hoffman frame. I find the question of Hoffman frame is largely what one started with in the first place. I think with very few exceptions those who started with the wide space on their Langstroth frame are still using that. In later years the newer men started in the field with Hoffman frames and are still using that. In the west I find them using Hoffman frames. I also find large producers who do not like Hoffman frames and you could not prevail upon them to use them.

The question of bee glue, or propolis is a matter where a regular Hoffman is necessary. I find in those places they are using a little metal projection to keep the frames apart. I like a self spaced frame, so I can pick up a bunch and move them. I like a self spacing frame, because I can shove them all together in haste. I may kill some bees, but I am careful to blow the smoke inside and it is done very quickly. I took this idea from Mr. Julius Hoffman. At that time he was operating 1,100 colonies alone, and he said he could not do it with the open or non-spaced frame.

The President—Mr. France was to be with us and give us a talk, but he has not made his appearance at all. We have no word from him.

I do not know of anything else. There are no questions, I believe.

Dr. Baxter—Is there anybody in the room that has some questions?

Mr. Dadant—I would suggest that we call up the photographer on the telephone, find out whether he is ready.

The President then called upon Dr. Baxter to take the chair.

Dr. Baxter—Members of the Association, before I assume the chair I wish to thank you for the honor you have conferred upon me, because I do consider it an honor to be President of the Illinois State Bee-Keepers Association, and it is with some hesitancy at the same time that I accept this office, because I know that it means work. There is much to be done in the State of Illinois, expecially in the matter of education and legislation. A number of you men are here from the various legislative districts of this State. When I meet the Legislature over here I wonder if there is any other bee-keeper in the State, for the simple reason that the bee-keeper at home never talks to his legislators. There were five men in the Legislature last year that I came in contact with that had been talked to by the bee-keeper at home. Now you must commence on your legislators and educate them to be bee-keepers and ask them for larger appropriations. From the present time on, the appropriation for foul brood inspector will be asked for by the Director of Agriculture. What we advise that man to ask for in all probability will be made up by the director in his budget. Now, it is necessary for the men, especially for the inspector and the deputies, to see the director and impress upon

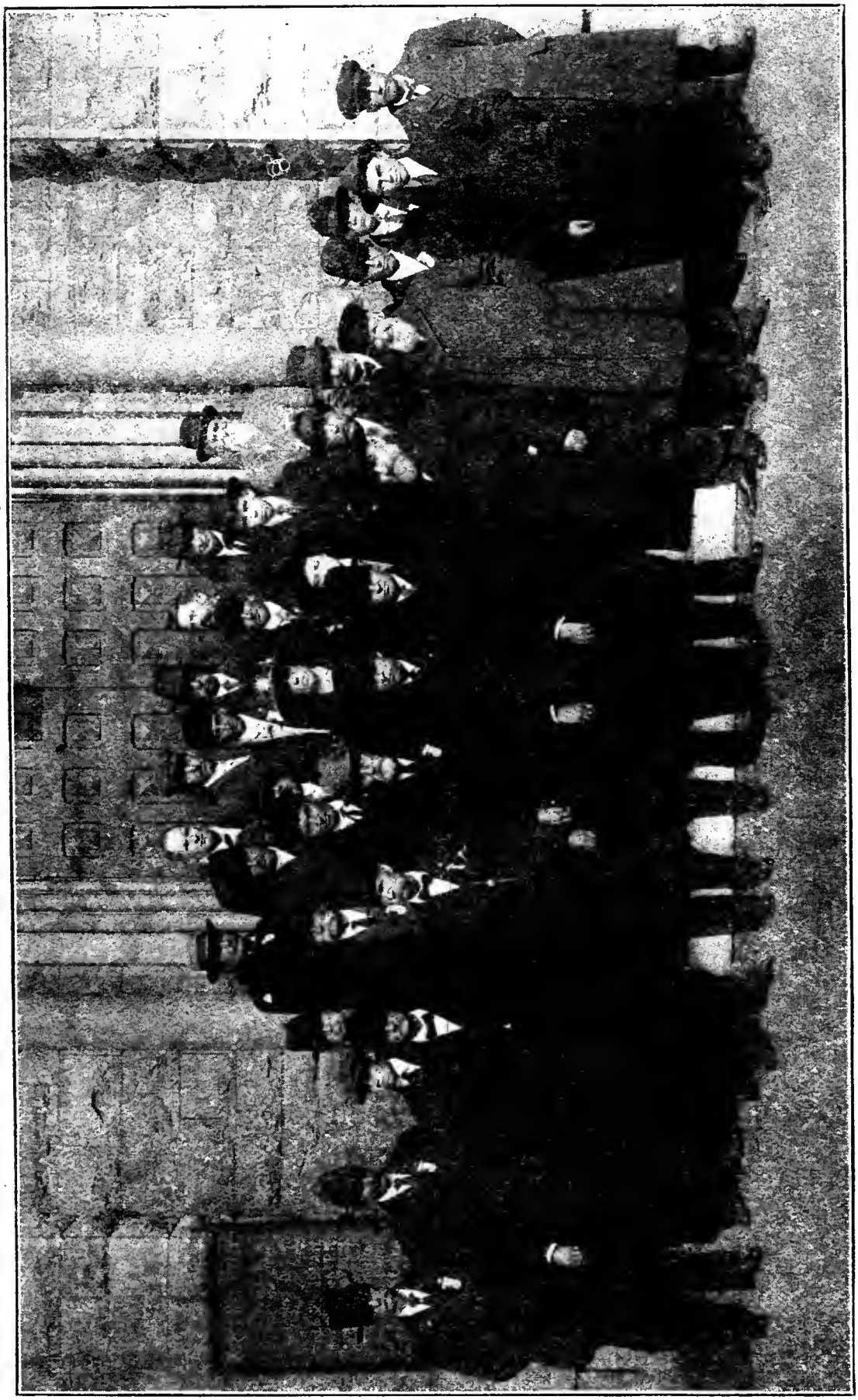
him the importance of inspection work. The men in the Department of Agriculture of the State of Illinois do not know a great deal about bees, but they are willing to learn and it is your duty to help and aid them. Your incoming President is willing to do his share, but he must have the active support of every bee-keeper in the State. And it is absolutely essential for an inspector when he inspects an apiary, regardless of who the man is, to have that man join this Association. Do not leave him until you get his dollar. There are one or two of the deputy inspectors that have never missed a man. I think that our friend Heinzel here would not leave a man until he got his dollar. That is what we must have. I sincerely appreciate the honor and I thank you.

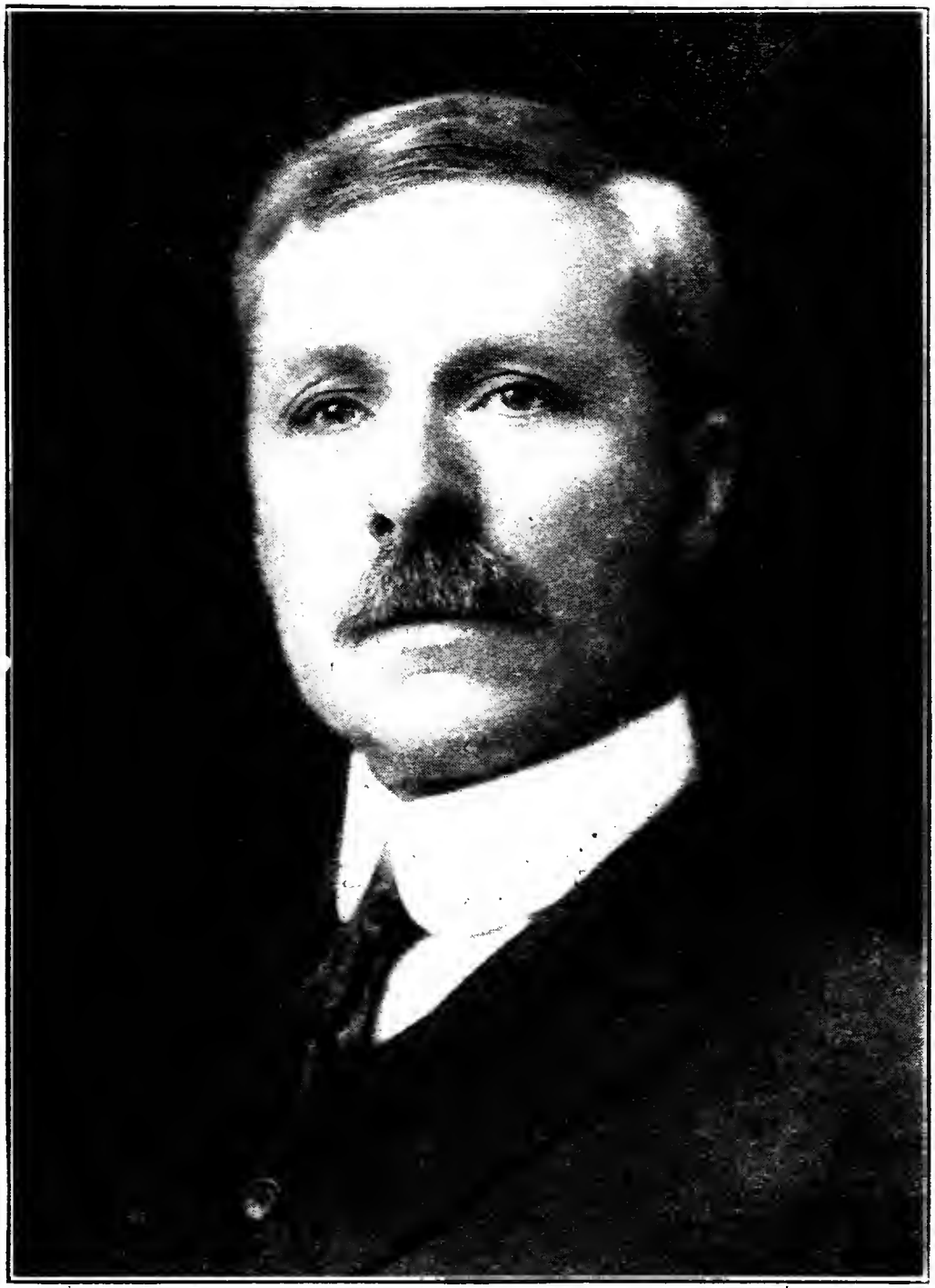
(Dr. Baxter in the chair.)

Mr. Dadant—I move that we have a recess to have our picture taken.

The motion was seconded by Mr. Baxter and carried.

After a recess the members met and a motion was made by Mr. E. J. Baxter that the convention adjourn *sine die*, which motion was carried.





PRESIDENT E. S. MILLER,

of the Chicago-Northwestern.

The Twentieth Annual Convention

OF THE

Chicago-Northwestern Bee-Keepers' Association

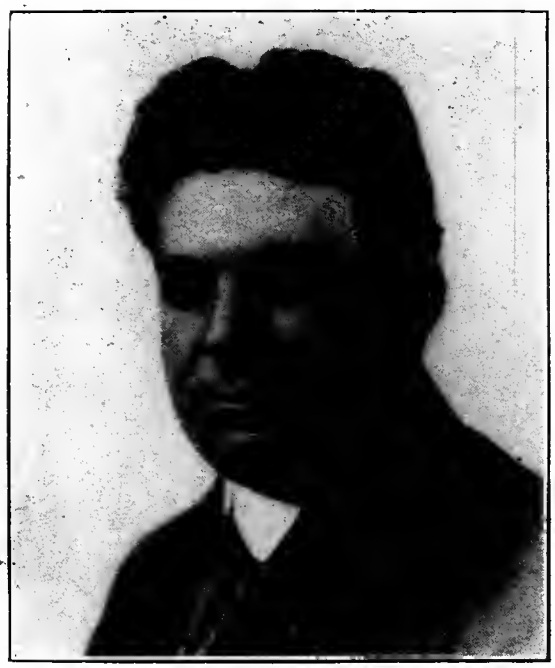
HELD AT

Great Northern Hotel, Chicago

November 30-Dec 1, 1917.

Mr. E. S. Miller, President, acting as Chairman of the meeting.

Mr. John C. Bull, Secretary.



JOHN C. BULL,
Secretary-Treasurer for 1918,
Also Secretary-Treasurer of the National.

The meeting was called to order by the President and the minutes of the last meeting read and approved.

The following committees were appointed:

Resolutions—Hassinger, Wheeler, Stewart.

Auditing—Coppin, McNeill, Sievert.

In view of the small number present at the opening of the meeting and the absence of principal speakers it was decided to begin by preparing a question box.

The President—While questions are being prepared it might be well to consider the past crop. Is there anyone here who has succeeded in securing a crop of honey this year, that is anywhere near normal?

The reports were as follows:

Mr. Coppin—Very poor. Our bees will average about twenty pounds to the colony.

Mr. Hann—About twelve pounds to the colony.

Mr. Simmons—Nothing.

Mr. Wheeler—Very poor.

Mr. Sievert—Nothing.

Mr. Stewart—Practically nothing.

Mr. Lyman—Practically nothing.

Mr. Fisher—Nothing to amount to anything.

Mr. Baldridge—I don't know.

Mr. A. G. Gill—I got thirty pounds from one colony.

Mr. Roehrs—None.

Mr. Coleman—None.

Mr. Hassinger—I haven't really got the average yet, from the 300 colonies. I have 100 cellar colonies, 100 outdoor colonies, and 100 two-pound package. I haven't been able to get the average yet,

because the conditions were different, but the 100 colonies outdoors averaged 165 pounds, the 100 cellar colonies 95 pounds, and the 2 pound packages 85. That is away up in Wisconsin, understand.

The President—In regard to my own crop, I can't say just how much I got per colony. It wasn't very much. I had to feed one yard by taking honey from another yard, so that in the four hundred colonies of bees, I probably have about two thousand pounds of honey to sell.

Mr. MacNeill—Mr. Secretary, what is the average?

The Secretary—Fifteen pounds.

The President—While Mr. Wheeler is getting the questions ready, suppose we consider the prospects for next year. We might call the roll again. What is the outlook for white clover next year, in your locality?

Mr. Simmons—Mr. President, I really don't know, but I am hoping for a crop next year. It seems to me that conditions must be ripe.

The President—Have you observed the clover stand, is it greater or less than it was last year?

Mr. Simmons—I have not, no, sir.

Mr. Haan—I haven't noticed the crop this year.

Mr. Stewart—Didn't pay any attention to the matter, at all.

Mr. Rhoehrs—No.

Mr. Sievert—No.

Mr. A. Coppin—I don't think it looked quite as favorable this fall, as it did last fall, for clover. I expected a good crop of clover this last spring, from the looks of things, but we didn't get the crop I expected, and I don't think it is quite as favorable this fall as it was last.

Mr. H. T. Fisher—I haven't noticed.

The President—In my locality there is apparently a good prospect for clover next year. I remember a year ago this last summer, there was no rain for a long time, and clover didn't get started. Clover is a biennial, it takes two years to mature. The first year it starts to grow and the second year it blossoms. This fall I have noticed in a great many places that there is considerable clover. Not nearly as much as there was in the fall of 1915, but a great deal more than there was last year, and I am hoping for a crop next year.

Mr. Wheeler—Did you ever see a bee-keeper that didn't hope for a crop next year (laughter)?

Mr. Stewart—Can you eat that hope this winter?

The President—The Secretary has suggested that we ask the question, what was the cause of last season's failure?

Mr. Stewart—You will have to ask the Lord that.

The President—Any one else a suggestion?

Mr. MacNeill—I believe it was because the hot sun and the dry weather of a year ago killed out the clover, and there wasn't anything to start the clover with, except the seed from the previous year, and that seed, as you say, hasn't produced anything this year.

Mr. Wheeler—I don't think we had the weather, Mr. President. We had lots of honey for a week or ten days, here in Cook County, in July, when that hot spell of weather was on, but that is really the only hot spell we had the whole summer; while it was hot nights and days we got lots of honey, and we didn't get a thing during the rest of the summer.

The Secretary—That is what I am trying to get at. In my locality and Mr. Miller's locality, if we had had some hot weather we would have got some honey. It wasn't because of a lack of clover, but because we didn't have any hot weather. All through June, and up to the Fourth of July we didn't get a thing. July fifth was the first hot day that came.

Mr. MacNeil—Was it because the bees couldn't fly?

The Secretary—It was cool and wet, not good weather for making honey.

Mr. Coppin—White clover was not very plentiful for the bees to make any very great showing on, and they didn't make any show until the sweet clover commenced to bloom, with the white clover. That is where they got what little they did get, from the sweet clover.

The Secretary—I think last year demonstrated the value of preparing for small yards. I had thirty or forty colonies in a yard. If you only get one-third as much clover as you do in a big year, you are going to get the honey if it is there. It will give you just as much, providing honey is in the blossom.

The President—If I were to answer this question, I would say there were three main reasons why we didn't get honey. The first was, the clover did not get a good start and contained very little nectar. What clover there was, contained very little nectar. In the second place, the weather was against us. In the third place we got an early frost. On the night of September tenth, we had a killing frost, which ended the honey flow in most of the

yards. I had one yard that was an exception. It was a peculiar condition. Never before have I known bees to make honey after the first killing frost in the fall, to any considerable extent. But in this yard they made no honey previous to that, and the honey in that yard was made almost entirely from golden rod, excepting in years when we got clover. The golden road was late and it blossomed after the frost, and for about five days those bees were very busy carrying golden rod honey.

Another peculiar thing about it was that the honey instead of going into the bottom of the hive, nearly all went into the supers, then I had a condition in which there was no honey at the bottom, but all at the top, so I had to remedy the matter. by placing the filled combs below. In that way I endeavored to feed the bees, but they are still lighter than they should be. As I said before, the three main reasons are the lack of nectar in the clover; secondly, bad weather; and third, the early frost. They should have gotten honey in August, from the heart's ease, and some of the yards were near where they could get mint, but the weather was against them, and then the fall flow was cut off by the frost.

Mr. Wheeler—We didn't have that frost here. We didn't have frost here till very late.

Mr. Gill—I think most of us are agreed that the cool weather had a great deal to do with it, but I am wondering if that might have been overcome to some extent, where two men lived close together, by some stimulative feeding in the spring, and lots of care. Suppose we have an instance where one man had his bees in good condition, so that he got some crop, whereas the other man didn't give his bees any care in that direction, and didn't do any stimulative feeding. and he didn't get any honey. Could the condition have been overcome more than we did overcome it?

The President—I presume it could in many cases.

Mr. Stewart—Mr. Chairman, I would like to ask a question about bee-keeping. Of course, you can all tell me. I have a hive that I want to run for extracted honey. I have all the comb that I want. It doesn't swarm during the season. I have another hive of equal strength, but I have no combs. I have plenty of hives and frames to start with. Of course, I put on those supers or starters; they swarm. A prime swarm comes out. I will hive that swarm and kill the queen, in the usual time they will swarm again, maybe two or three times. I will hive those swarms again, I will let those bees go until fall. I will shake the bees off, extract the honey and melt up the combs. Which one will give me the most money?

The President—You have the question, who will answer it?

The Secretary—We would have to know what the honey flow is from.

Mr. Stewart—It doesn't make any difference.

The Secretary—It makes all the difference in the world. A great deal would depend on the source of honey. If from a late fall flow the several swarms would have a chance to build up and maybe would gather more than the one left with combs. With a clover flow the reverse would be true.

Mr. Stewart—Clinch your teeth in that awhile, you fellows that know it all.

Mr. J. C. Wheeler—I didn't understand the first part of that question. Do you mean by that, that one hive will swarm naturally, and in the other that you shake them out of the comb?

Mr. Stewart—In the first colony I have all the combs that I want, and I run it for extracted honey.

The Secretary—Was that a swarm?

Mr. Stewart—The old colony. I have all the combs I want. I run it for extracted honey. It doesn't swarm during the season. I have another hive of equal strength. I have only frames and hives with starters in. Of course, I put on honey supers, that started the swarm. I kill the queen. In the usual time they will swarm, maybe two or three times, again, and I will hive those swarms on starters; I will let them go until after the honey flows in the fall, and shake the bees off, and extract the honey. Which hive will give me the most money?

Mr. Coppin—Mr. President, I would say the one furnished with plenty of combs. With the supers we had this summer, we got a half a dozen swarms from that one hive. When fall came, though, I didn't have any honey in the whole four or five swarms, there wasn't any honey there. Between them I might have got thirty or forty or fifty pounds of honey.

Mr. MacNeill—Another thing you didn't figure, and that is how many swarms you would lose.

Mr. Stewart—You fellows figure it out.

The Secretary—I believe for myself I would take the one that didn't swarm, and had plenty of combs. We might take a standing vote on that, and see how we stand one way or the other.

The President—Those who favor the old colony with plenty of combs and no swarming will please rise. Thirteen—unlucky number.

Those that would favor killing the old queen and letting the bees swarm, and hiving them on starters, please rise. Thirteen to one.

Mr. W. H. Stewart—When you get beyond that, which will come out ahead, if each one stands on its own merits, in five years, which will give you the best results?

Mr. Haan—The conditions on something like that would vary so greatly that you would never have the same figures twice.

Mr. Coppin—Mr. President, the way I understand that question was, at the end of five years, the man that would leave them to swarm, wouldn't have bees enough to last five years. That old one swarms so much that it would die and the young colonies would all be dead, so you would be so many colonies short every year, the way I look at it.

Mr. Stewart—Well, I guess you fellows haven't studied that over very much.

The President—Here is a question. What would be a good system of management of an apiary of less than one hundred colonies? That is a pretty broad question.

Mr. Haan—Mr. President, I am the one that asked that question. There are so many members here, older in the business than I am, and I would like to hear from them the different ways of running the number of colonies of bees that they have, and I imagine that there are no two people who run an apiary alike. Of course, it would be interesting, I guess, to all, if we could get hold of systems, the way different people run their different apiaries.

The President—You have in mind running the apiary through the swarming season?

Mr. Haan—Yes, through the summer season, to get the best results.

The President—I have been studying this question for a good many years. I change a little every year, and I think I make my system a little better every year. I think, at our last meeting here, and the meeting the year before, I gave something of my mode of management of colonies through the summer. I find, that if one wishes to get along with the least labor to get the maximum results, a very good plan is to place a second hive body upon the first hive body, along about the time fruit blooms. Now, of course the bee-keeper will have his queens clipped, not so much urpose of preventing swarming as for the p urpose of identification later. for the p

At the outside of the second hive body I would use combs of honey kept over from last year's extracting. It is well to save over a considerable number of these combs. I think two full combs filled with sealed honey for each colony wintered, is about right. In the middle I would place, if I have them, about two empty drawn combs. The remaining part of the second hive body, that is, the one on the top, would be filled with full sheets of foundation. When the bees start to work, they will begin to draw the foundation down to the bottom bar. Those two empty drawn combs in the middle will help to get the queen started upwards.

The tendency of the queen is to work toward the top and if the bees get started above too soon, the bottom or lower hive may not have any brood left before the season is over, in many cases; so start the queen below, and give her plenty of room so she can work upward. By using twenty frames in which she can deposit eggs there will be very little tendency towards swarming.

If you are working for extracted honey, along about the time clover begins to yield, place on the top of the second hive body a queen excluder, and then a super, using eight frames in the ten-frame super. Now, if you are getting a good flow you can keep on adding supers, as many as are necessary, and your work from then on till fall will be to remove honey and add supers. This is a scheme for extracted honey. If you raise queens, then you will have to modify this plan to a considerable extent.

In the latter part of August, I would reduce the brood chamber to one story. You can shake the bees out of the upper story and give them sufficient honey and brood below, so that they will have enough to last them through the winter, and then above the first story you place the excluder and add supers on top on that. The extra brood taken away can be used for strengthening the weak colonies and in building up nuclei.

If there is an August flow, this second manipulation should be done early, about the time the flow begins.

In going through them, prepare them for winter and see that they have plenty of bees, plenty of stores and a good queen. If there are queenless colonies, place them upon another hive, with an excluder and a newspaper between.

You will note by this process that there is a minimum amount of labor and very few of them will swarm. In exceptional cases a few will swarm in spite of anything, but this system is usually effective.

Mr. Wheeler—Is that the object in dividing and spreading?

The President—I don't spread the combs. I simply put on this second hive body, and use foundation and enough combs to get the queens started up above, with sufficient honey to keep them from starving.

Mr. Kanneberg—Mr. President, haven't you found that sometimes the queen will go up in the top of the hive and leave the lower one all empty after the brood is out?

The President—That is just why I used foundation in the second hive body.

Mr. Kanneberg—I have done that same thing, and after awhile when I looked at my lower hive there was no brood, queen or anything there. They all went up in the top of the hive.

The President—Did you put sheets of foundation in your top hive, or did you put in brood combs?

Mr. Kanneberg—I put brood comb in.

The President—That is where the troubles comes.

Mr. Kanneberg—I see it is.

Mr. H. T. Fisher—What is the idea of the queen excluder and the paper?

The President—The paper is to keep them from fighting. Along the latter part of August, especially when it gets a little cool, you put two colonies together and they will fight and kill the queens, and kill a lot of the bees.

Mr. Fisher—I mean a queen excluder.

The President—To keep the queen down where she belongs. Another point: If eight frames are used in a ten frame super it will save you a large amount of labor. It is very much easier to uncap than if ten frames are used.

Mr. Haan—There is another point I would like to touch upon in regard to swarming, and that is this: How do you manage from the beginning of the season until the swarming season stops, to keep your bees from swarming?

The President—The secret of non-swarming is to give the queen plenty of room to lay her eggs, and the bees plenty of room to store honey. Give her twenty frames, if she needs them, and plenty of room to store the honey.

Mr. Wheeler—That is a point I have been studying for several years, thirty or forty years, maybe. That is a point, I am afraid you are mistaken along that line, because it is your locality that helps you out on the swarming question. In Illinois we have to do something besides give them more room. We can put on all the supers we please, and all the combs we please, and when they get ready to swarm, they will swarm in spite of all we can do. I know a man living out at DeKalb, a Mr. Teder, a very successful bee-keeper, and one of the things he does is to prevent swarming. He told me that for years he got along without any swarming. I said, "How do you manage?" "Oh," he would say, "I don't know. I just put on supers and I don't have trouble with the swarms." The other day I met him, and said, "I know that a mere process won't keep bees from swarming. I have been reading a good deal lately about spreading the brood-combs," "Do you keep on the same amount of brood comb the year around, or do you spread your combs?" "Yes," he said, "I spread my combs in the spring, about the first of June. I believe that is the secret of it." I believe there is a lot in the spreading of the combs in the broodnest.

The President—Mr. Dadant I believe was expected to have a paper here at this meeting, in regard to that. His claim is that by spacing his combs wider apart there will be less tendency towards swarming.

Mr. Stewart—I want every hive of bees that I own to swarm at the beginning of the honey flow.

I have killed the queen, and I have stopped brooding for eighteen days, and if there is any honey, I get it.

Mr. Haan—Mr. President, I would like to outline a sort of a system that I ran this year. I don't know whether anybody else would be interested or not, but last spring of course I couldn't do anything in the way of increasing. I made very little increase. When a colony prepares to swarm in the springtime, I usually divide them by setting an empty comb in the bottom and a week later setting the top colony away somewhere to a new stand. That will give the colony I set aside a chance to make a new queen for themselves, and the old colony has the old queen. The old queen is building up on one comb and the rest foundation. It will be quite a long time before she gets ready there to deposit any honey or raise much of a brood. Perhaps by that time the honey flow will be on. Well, now, the new queen from the top isn't so likely to swarm that season any more, but the old queen may again swarm. Now I have taken the old queen away, that is during the honey season, she wouldn't be needed there anyway, and have started a nucleus with her. By the time that you would have a new queen the honey flow would be about over, and I have let them go that way.

It is a question with me whether it would be advisable to let them make their own queens, or get queens for them so as to have queens ready when they get into shape to receive a queen. That is another question that bothers me some yet. If there is anybody here that is a little better posted on that subject, I think it would be interesting to most of us to know about it.

The President—One difficulty in your mode of handling them in this way is that you are not improving your stock.

Mr. Haan—No, that is the point that is bothering me.

The President—I ran across a scheme for rearing queens last year that was worth a good deal to me. Perhaps it will be worth something to you. I have been trying in the past to rear queens by grafting cells, using the usual methods, and have not been as successful as I would like to be, because the bees often times failed to draw the cells out, but this plan I find effective in getting a large number of cells started. The plan is this: Take a fairly strong colony, remove all of the unsealed brood, and if there are not bees enough, shake some from the other colonies being careful not to get the queens. Capt brood may also be added, but be careful not to include any unsealed cells. Next secure a comb of unsealed brood from your best breeding queen and place it *horionztally* above the frames of the prepared hive, leaving about an inch between it and the frames below. It will be found that a great bunch of bees will gather on the under side and will draw out a large number of cells, especially if they are fed slowly at this time. It will be found that a much larger number of cells will be started than if the frame of brood is placed vertically and they will be better cells. However, they should not be allowed to start too many as the cells are apt to be insufficiently supplied with food.

In this way queens may be raised from our very best stock, and I believe that it pays to do so. As an example, I had one queen that was reared from best stock the previous season and her colony stored a surplus of one hundred pounds this year, while the average for this yard was less than ten pounds.

Mr. Stewart—Where did they get it?

The President—They didn't get it from the others.

Mr. Stewart—Are you sure of that? I think they are very systematic robbers (laughter), some of them.

The Secretary—I might say a word in regard to that style of queen rearing. I tried it out five years ago. I took an ordinary shallow super and cut it right in two. It made a little over a two-inch rim and I took some pieces of tin and run them crosswise and laid my comb on top of that for my bees to work on, then I had about two inches of space under there. That will give you all kinds of space and everything in the clear.

The way I prepared my colony was something like this: I went through it and took all the brood away and filled up the hive with empty combs and left the queen. I left them that way for about a week—let's see—no, ten days, nine or ten days—that was the idea, putting the sealed brood above. I went in there in nine days and the brood absolutely would be all sealed in the upper hive. The queen would be laying heavily below. You take out your ten combs of unsealed brood and put your sealed brood back below and your comb of larva for queenrearing. You have got a tremendous force of nursing bees and nothing to feed but your queens above. They will build out 20 to 50 cells as pretty as you ever saw.

Mr. Haan—Now, Mr. President, in laying a frame horizontally over a colony of bees, you must cut out certain cells there, don't you, in order to make room for the larger sized queen cells?

The Secretary—If you want to, you can go over it after the cells are started, and wherever you find two cells built so close together that you can't cut them out without destroying one, destroy one right there. The bees will not build all those out; you have got twenty-five cells on every square inch of comb you put in there, they will bunch those cells up, cometimes three and four in a bunch, so you can't cut them out. You can see as soon as those cells are started what you can save.

Mr. Stewart—I thought you bought all your queens.

The Secretary—I do now. This was four or five years ago.

Mr. Wheeler—Mr. Chairman, I have never agreed with this convention or any other convention on the queen question. I do not to-day. I am old-fashioned and curious, and all that kind of thing, but I really think that the queen rearing business has been run into the ground. I have found in the spring, by carefully watching and experimenting, that it doesn't depend so much on the breed of the queen and the color of the queen, as it does on the strength of the colony. In the spring when I am clipping, going through my combs, lots of times I lose some of the queens from the very strongest colonies. It

happens in the strongest and best colonies quite often. What do I do? I go to a weak colony that won't probably gather a pound of honey during the summer. I take out their queen. I introduce her to that strong colony. I find invariably by giving her that strong lot of bees and the enthusiasm of the hive, that she fills that hive with brood, and she is as good a queen as the queen that was in the hive before, unless, of course, old age or accident overtakes her. Once in a while they are crippled, but as a rule I find that that queen is just as productive and as energetic and lively, if she is taken from a swarm that only has a handful of bees, in the last of May, and put into this strong colony, as if she was really from a strong colony. And so I have found by experimenting for a great many years, that a great deal more depends upon the care which bees give the queen and the condition the queen is placed in, than depends on the breed of the queen.

Mr. Hassinger—I think that all leads back to the queen again, for the reason that the bees were not her own descendants, and her bees wouldn't have the enthusiasm or whatever you want to call it, to prepare the space for that queen. As long as she wasn't with the other bees to do that, she could lay just as many eggs, but as soon as the other bees were dead her own bees wouldn't be good enough to do that, and to keep it up all summer.

The Secretary—Those bees might last the summer through.

Mr. Haan—What does Mr. Wheeler think of that?

Mr. Wheeler—I wouldn't give a snap of my finger for any difference in the breeding.

Mr. Stewart—The question comes up here, does it pay to winter a queen the second winter?

Mr. Wheeler—I let the bees take care of that.

Mr. Stewart—That is the question, does it pay a honey producer to winter a queen the second winter?

The President—Yes, it does, if a good queen.

Mr. Gill—Dr. Miller says it does.

The President—I want to tell you about an experiment I tried once. I bought a queen from a certain queen breeder, one of the best queens I ever saw. I raised that year about sixty queens from that one. Next year I put these hives in the front rows of the yard. In the remaining hives I had ordinary stock. The result was over one hundred and fifty pounds per colony from my specially bred queens, while I got less than seventy-five pounds from the others. Now, that shows there is something in breed. It isn't always a queen's fault. There may have been a change in the stores, or the bees may have been badly wintered. Sometimes you can put one of these queens from a poor colony into a good colony, as Mr. Wheeler says, and they will do well, because it hasn't been the queen's fault in the first place.

Mr. Wheeler—There are so many things coming up now, and there is a little point that you might not think of, but those colonies in the front rows were just where they would catch all the stray bees coming into the whole yard. Maybe some of you folks have noticed that the hives on the outside will catch a great many stragglers that come in from the field. They will increase your colony nearly a fourth, and you will find that those bees in the outside row will catch the straggling bees and they will increase and do better, and every quart you add makes them that much stronger. There are so many accidents coming up, and we are quite apt when we get a queen we think a great deal of, to see that they are kept up and in that way you increase the production.

Mr. Coppin—Mr. President, that theory of the outside row receiving bees that belong to other hives, I don't go much on that. I think that each bee will find his own hive. You take it and put it in another hive, I think it will take wing and fly till it gets to its own hive again. I have found that there is very little difference between that front row and the middle row. I would like to hear from Mr. Bull along that point.

The Secretary—My experience was just like this, the back row lose no bees, they get what are coming to them.

Mr. Wheeler—I just happened to think of that when Mr. Miller spoke of it. There are so many little things to be considered, coming up, that you do not ever know what conditions are that would cause a colony to be stronger than another one.

Mr. Stewart—Then there isn't any certainty in beekeeping.

The meeting adjourned to 1:30 p. m.

FRIDAY AFTERNOON.

November 30, 1917.

President E. S. Miller, chairman of the meeting.

Mr. Bull secretary.

The President—Last year a committee was appointed to consider prices and to recommend a minimum price for selling

honey, both at retail and wholesale. Mr. Bull is chairman of that committee, and he will report on the subject. He will also give the Treasurer's report.

Mr. Bull—There isn't very much to the treasurer's report. We had cash on hand to start with a year ago, $30.82, and we received by dues, $72.00. Of this, $24.00 was sent to the Illinois State Association for our membership at 50 cents a member, and we received $14.82 expenses allowed by the Association for printing and postage a year ago. Altogether our receipts were $110.89. Expenses were $82.27. Cash on hand up to this morning was $28.62. That doesn't include what I took in here to-day. There was $28.62 still in the treasury this morning. (Applause.)

Mr. R. A. Burnett—Mr. President, I move that the Treasurer's report be accepted and made a part of the record.

Mr. Kanneberg—Mr. President, I second that motion.

The President—It is moved and seconded that the Treasurer's report be accepted and made a part of the record. Those in favor signify it by saying aye; opposed, no. (Motion carried.) We will now hear from Mr. Bull in regard to the committee.

Mr. Bull—In regard to that price committee, we made up a list of bee-keepers of about six hundred names, in the four states, Wisconsin, Illinois, Indiana and Michigan, and we had a few names outside of that. We sent out three letters to each one of those names, making eighteen hundred letters, all told. The printing was $22.82, postage, $18.00. Paid out for help $13.50; total, $54.32 for eighteen hundred letters, practically three cents apiece is what it cost. That will be taken up a little further, and I will say more on it later.

Mr. Kanneberg—Mr. President, that is paid, that bill, isn't it?

The Secretary—This bill is all paid; it is all counted in, in this report.

The President—We have a paper by Mr. Hassinger.

THE VALUE AND MORAL EFFECT OF THE "PRICE COMMITTEE."

(By Edward Hassinger, Jr.)

No doubt the value and moral effect of the price committee may be under-estimated or over-estimated, according to each individual's experience. I would like to call your attention to my personal experience and at the same time emphasize the necessity and importance of a price committee, as I see it now, after noting the effect same had this season.

Conditions were such that before the final crop reports were at hand I felt like a lost man in a desert must feel. In my locality a good crop of honey was harvested, but what price to ask I was at a loss to know; all I could do was to use my judgment from all sources of available information; with all the journals as monthlies now, the time between issues is much too long to help us much and the reports were so conflicting that they really were of little value.

When the first letter came from the price committee, it was a distinct relief from being lost in the dark—it was something to go after, a goal to reach, something standard: it was authority and could command some respect. It has the power through suggestion to create a standard price.

I believe the time will come when we must realize that supply and demand are not as important in making a price as most of us are inclined to believe, providing of course something is done to equalize distribution over the greatest area of territory, and extend it from one season to another. I knew about what honey was worth, but the question was what can I get, and how do I know that I may not get stung? All conditions were too uncertain and unreliable. Is it any wonder that the producers who do not even read a journal are afraid they cannot sell their honey when they get a crop and will sell for whatever may be offered them?

We must help ourselves by helping others; we must tell them what honey is worth and back it up with and by authority, "a price committee;" but that is not all; some of us must make a sacrifice to lead, and inspire others to follow. Here is where the moral effect comes in; personally, I sacrificed 50 per cent of my local trade this season by asking from two to three cents per pound more than most of the smaller producers did, and I never hesitated to tell customers that they could buy honey cheaper from others if they thought my price was high. As a rule, such people already knew that they could get honey for less money from others, so it made little difference, and I always told them that those that were selling for less did not know what it was worth, and that they should buy from them because the price was sure to go up still higher.

Some of these producers experienced such a demand that they began to sit up and take notice, thinking that they were really selling too cheap and could raise the price and still sell for less than a few of us did; in the meantime the few of us would again raise the price, etc. You will readily per

ceive that this would never have happened if there was no gage or basis to work on, such as the prices suggested by the price committee. A few of us led the way toward those prices; the others knew we were leading toward those prices and followed in the rear. As a result, local prices are higher than we had reason to expect.

The effect on the wholesale market I do not know much about, but am sure that the prices suggested by the committee had more weight than any market quotations could possibly have had. Many of the larger producers held for this price, and they knew that hundreds of others were also holding for the same figure; like the hand of a clock or compass, it pointed the way. The buyers in turn knew why the producers all held for the same figure; this enabled the buyers to allow a certain figure as buying price or cost price, and to use that as a standard, and at the same time it took away much of the uncertainty of buying at different prices. A readjustment of their selling price was all that was necessary to meet the conditions.

There is absolutely no reason why the buyer and seller should not meet on an equal basis—no more see-sawing about the price.

The cash value of the price committee was several hundred dollars to me, but that I do not value as much as I do the value of coming out of the dark into the light, knowing what to do and why to do it.

I believe the work of the price committee should be extended to cover the entire United States; it can be done with paper, ink and postage stamps and a few intelligent men as leaders, backed up by at least one man from each county to report the crop of honey, etc. It takes work and money to do this, and the work should be paid for just as well as the paper, ink and stamps. To get the money we must get the support; to get the support, we must have something to offer and let the bee-keepers know what we have to offer; it costs money to advertise and it pays to advertise if you have something worth while to offer.

Therefore, to get the support to carry on this work we must raise money to tell the bee-keepers what we have to offer and convince them that they will get full value for their money and a square deal at all times. If it costs five cents per letter to be sent to prospects asking for support, one dollar would pay for twenty letters. Out of every twenty letters to prospects, I should expect two dollars cash in return; and if the two dollars were again spent for prospects and the support doubled on every cycle, we could have every bee-keeper in the United States worthy of the name as a paid up member. If the results after a fair trial do not show a gain, it would be because there were no bee-keepers in the country, only bee-owners.

This Association has started this work through the individual efforts of our Secretary, Mr. John C. Bull. I am anxious to learn from him what the results were.

Secretary Bull—He has asked me what the results are; I didn't know there were any till he told me (laughter). How could I know? I sent the list out, that's all I knew about it. All I do know is when I got out the notices in the journals, and I think it was in June or July, asking for the names of bee-keepers so I could make up a mailing list, I stated we would send them free to the four states mentioned around Chicago. Outside of those states you will have to send me ten cents. The bee-keepers sent me all the way from ten to twenty-five cents. If the bee-keepers can afford to send twenty-five cents for that, I think we better send it to all the bee-keepers. We have got to have the money to pay for that postage, printing and work We have got enough bee-keepers in the four states that we ought to have five hundred or one thousand members. You give me a thousand dollars to work on, and I can send out several thousand letters.

The President—You have heard the report, and Mr. Hassinger's paper; have you any suggestions as to what we shall do? Is it practicable for us to dig up the money to extend this work in the future? Has anyone a suggestion as to how we shall do it?

Mr. Hassinger—Mr. President, before that is answered, I would like to have Mr. Bull tell us just what it did cost to send out those letters; that is, the postage and paper and the printing, and also an estimate of the amount of work that was required to do that. There is no man can do that without being paid for it, so if we can get some basis to work from, and see what we can do, we can arrive at some decision in the matter.

The Secretary—All that I know I have told you about the work. Of course, I didn't keep any track of my time. The printing and postage alone came to about two and a half cents a letter. The work, I hired part of it done; I did what I could and hired what I couldn't do. It would come probably around four cents a letter, maybe less, maybe more. It depends on how much you can get the work done for. The

biggest part of the work is addressing your envelopes, folding the letters and getting them ready to mail.

In making up that index of names, the list of names, there is a lot of work to that, too. You have got to have all that suff indexed, look up each name and see if you have got it, and you have got to send out letters to get those names. I have six hundred names now. If you send out a letter, I would say we ought to send out one letter with three-cent postage on it, to each of those six hundred names. When we do that, we know whether they get it or not. If they do not get it, we will take that name off the list; we will not waste any more postage on it. We have got to make our list a large one. At the same time we send out a blank to be filled in with the name and address of all the bee-keepers around there. From that six hundred names you will soon build it up to six thousand. But what good will it do to build it up if you haven't got the money to carry it through. I took a chance on guessing how much money we would get in, and guessing how much it would cost. That is the reason I only got up a list of six hundred names. I don't know how many bee-keepers there are in the four states around, representative of this Association, but I should say there are a thousand of them and then a good many more, and when I say that I am referring to the bee-keepers who have ten colonies or more. If we had tried to make the list from one up, they say there are thirty-five thousand in the State of Illinois alone. If we can send a letter to each bee-keeper who has ten colonies or more, we should worry about those who have less than ten. What little honey they have won't amount to very much. We want the other fellows.

I might mention a little instance that occurred right in our own town. Most of you heard what our report was for honey, and yet about a week and a half ago an advertisement came out in our local paper, "Country honey, twenty cents per cake, delivered." Did that party get one of these price letters? No, she didn't. I immediately got busy on the phone. I told her what her honey was worth. I said, "If you don't want to put the price up, if you still insist on selling it at twenty cents, bring me up what you have left and I will take it." She didn't bring it up, but she didn't advertise any more honey at twenty cents. She probably would have wanted twenty-five if I had bought it.

Mr. Stewart—You can get all the comb honey you want in this town at fifteen cents a pound.

Mr. Bull—I will take all you can get at that price.

Mr. Coleman—Right down on State Street, you can see Airline, two pounds and four ounces, seventy-five cents.

The Secretary—The standard price on Airline is thirty-five cents in cartons.

Mr. Stewart—This is a reliable firm; put that down.

The Secretary—You all know that honey cannot be bought for that. If there is anybody in Chicago that wants to sell honey for less than what it is bought at, it is up to them. I don't think you will find that generally.

The President—We understand that the purpose of this committee is not to put an exorbitant price on our product, but it is to enlighten those people who are selling away down below what they should. Hundreds of bee-keepers are so afraid they will not dispose of their crop, that they sell it for less than it is worth. The purpose of this committee is to enlighten people as to what honey is actually worth on the market. The result in my locality has been to raise the price. I believe the work of this committee should be continued, and not only continued but should be extended. If we are not ready to consider the means of doing so at present, perhaps we would better let this question go over until tomorrow, till some of the gentlemen have a chance to work out some practical scheme to present for our consideration.

Mr. Kanneberg—Mr. President, why not ask the other Association, for instance, the Wisconsin Association, and all these other Associations, to help us in that? Wouldn't they combine with us, so that we could extend these things in good shape?

The President—It might be a good thing, but it would be difficult to get together with them. A committee will have to be appointed, and it must not be a very large committee, or else much will not be done. We are not acquaninted with those people, and they are not acquainted with us very well. It might work out all right. I do not see that it would, just at present.

The Secretary—I think this is a scheme a little bit too young. We have got to get it going a little bit stronger. When anything is going, everybody else wants to get in. We don't want to ask people to get in, we want them to come and want to get in. After you get this thing to going

strong, that is the organization, what we want is a big membership and a big lot of money here to work on. We want to be able to go up to a bee-keeper and say, "I want $1.50 membership fee for a year." He will say, "What are you going to give me for it?" "I will send letters to each of your neighbor bee-keepers, telling him what honey is worth, to keep the price up." Probably he only has ten or twenty-five or a hundred and fifty dollars' worth of honey. If he raises the price one cent, he has almost doubled his money all right.

The idea is this: you can't figure this year as any average of any kind, because the honey crop has been so short it hasn't been very much trouble to regulate the price. Suppose we get a big crop of honey next year, like we did in 1916. Six hundred letters are not going very far. You need about six thousand to make any effect. These people that don't know what honey is worth are going to sell at any old price they can get. But when a letter goes out from the Association, telling them what the honey is worth, they are going to sit up and take notice. The idea is, how are we going to get those members? Each one of us have got a committee, and every year we are going to go after them. Get every member you can. If you can't get the members, send in your own membership now, and send in the list of names. If we send those letters out for awhile, a year or two, and keep the price up, even if they do not join at first, they will come after awhile. If we can save them a few dollars the first year, they will be glad to join. It is going to take a lot of work and a lot of study to get that going, but if we go after it right, we can make it pay.

A Member—If your neighbor has bees, you can't tell him how much to sell his honey for.

The Secretary—If your neighbor has bees, you can control that, yes. You know how it is. When you go up to a neighbor you say, "Your honey is worth such and such a price." He will say, "You keep still, I am attending to my own business." If the price committee sends out a letter, he will listen to that, but you can't say to your neighbor, "Here, you sell your honey for this or that." You will have to go around the other way to reach him. It will have to come through this Association.

Mr. Hassinger—I do not think that anybody will understand that the price committee is trying to dictate the price to anybody. It is merely a suggestion to let people know what honey is worth. You don't have to sell for the exact price, but you will know what it is worth. We can go near it or over it, but we want to know what the price should be, what the honey is worth.

Mr. Kanneberg—Mr. President, I know from my own experience that I want to get as much for my honey as I can, and it should be the same with any other man. If he has only one or two colonies, he wants to get as much money for his honey as he can, and if he gets instructions that the honey is worth that much, I am sure he will be willing to sell if for that. If he knows he can get five or ten cents more for a cake of honey, he is glad he can get it, and next year he will be still more glad when he can continue this sale

Mr. Stewart—I would like to ask every man here, if the general public knew some of the facts about honey, how much honey could you sell at any price?

Mr. Roehrs—What facts, for instance?

Mr. Dadant—I think that our friend Stewart is usually on the opposite side. We get a pretty good price for our honey. The question is, if everybody knew the facts about honey, what would we get for our honey? The question seems to be put in a way to imply that we would get less money for it or that we couldn't sell it at all. I think if the general public knew the exact facts about honey, there would not be enough honey produced to fill one-tenth of the demand.

The last two years the American Bee Journal has printed a very small pamphlet of sixteen pages, "Facts about honey." You have no idea the number of people who have looked through that and said they were astonished; they didn't know what extracted honey was, and didn't know why it could be sold cheaper than comb honey. I am satisfied that there were over one hundred thousand copies of the pamphlet published and sold. I am satisfield it has helped to increase the price of honey, and if you can only inform the public in regard to what honey is really worth, how pure and sweet it is, and how good, how healthy, that we can sell at good prices all we can produce. I want to say here that when I saw the prices set by the committee this spring—my eldest son is a member of that committee, if I am not mistaken, I told him, "You are placing it too high." "You must remember that I have been for nearly fifty years selling honey, and that only at the beginning, about 1868 and 1869 has honey sold at what it does to-day." We have sold a great deal of honey at all the way from six to ten cents a pound, and to

think of selling it at retail for twenty-two, twenty-five, thirty and thirty-five cents a pound, I could hardly believe it. But it is selling in ten-pound cans for two dollars and twenty-five cents. We used to think we were doing well at a dollar and a quarter. I agree that the war has something to do with it, but I also think bee-keepers are becoming enlightened. If we were to follow Mr. Stewart's method, we wouldn't get together. I wonder why he comes (laughter), and we wouldn't encourage anybody to ask prices for their honey. That is not right. Let us get together, and let us encourage the people to get a good price for their honey. I think that is what this discussion is leading to (applause).

The President—We have with us this afternoon, Mr. R. A. Burnett. Perhaps he can enlighten us in regard to some subject with which he is familiar. He sells a good deal of honey in the city, and knows more about market conditions here than perhaps anybody else We will be glad to hear from Mr. Burnett (applause).

Mr. R. A. Burnett—Mr. President, friends here interested in honey: I note that I am called upon to address you on the subject that I suppose I ought to know all about, but really I don't know a great deal about it. I sell honey for what I can get. I try to get a price for it, and if I find that I can market that high, I hold to that price. If the market will stand a little more, I increase the price

To use an old-time hackneyed phrase of supply and demand, we find if we are getting a supply on hand more than we have a demand for, we try to encourage people to buy by reducing the price. Now it so happens that if we are informed as to the amount of honey that can be supplied from all sources, we having an experience of a few years, know that the supply can be marketed at about a certain price, and we work towards that.

One of the things that we try to keep people from having a knowledge of is, that there is a light crop of honey, in fact, that there is no honey to speak of. It has been a failure most everywhere, and the conclusion that people come to, without you saying anything to them about it, is that it is going to be very high in price, and they make up their minds that they must find a substitute for honey and cut that out. I have had an experience of about forty years, and it ought to count for something along these lines. I remember that about thirty-five years ago we had a short crop of honey, and we told everybody when they came around to buy honey, that honey was very scarce this year, and we were asking twenty-five cents a pound for comb honey. Before that we had been selling it at about seventeen or eighteen cents. They said, "Well, I don't believe we can sell it at that price, and I guess we won't take any now." The first thing we knew, we had quite a lot of honey on hand, and very little sold.

To substantiate my position on that, a little later, two or three years later than that, perhaps, we had a failure in the peach crop. There wasn't going to be any peaches, and the newspapers had it printed everywhere "Peach Crop a Failure." There was quite a large crop of peaches in Michigan that year, but when the time came to put the crop on the market, some of our people would come along the market, and they said, "Why, look at the peaches. I thought there wasn't going to be any peaches this year." "Well," we said, "They are here, and we would like to sell them." "Is that so? Well, I don't believe I want any peaches this year. They are awfully high, aren't they?" "Why, no we are selling them cheaper than we did last year." "Why, how is that? I thought there wasn't going to be any peaches," and so on. "Well, won't you buy some at fifty cents a peck?" Nice peaches were selling at that price then. "No, I have made arrangements for something else. I don't think I will bother with peaches this year." The result was that they rotted on the market. Now, this price committee is a very good thing in its way, and it has got to be managed with a great deal of discretion. You, I think, would do well to get people of long experience on a committee of that kind.

Now, it so happens this year that we did very well, for the reason that there was a short crop of honey, but the prices that they put out, and the people that heeded that, didn't sell their honey. They have it now. The result is that honey sold at the beginning of the season at probably a little less price than might be obtained later, but people got to using it, and we are having quite a trade in honey. As our friend here from the lower part of the State, or the western part of the State says, that honey sells.

I don't know but what it would be presumption on my part to say what does make it sell, for during this period of years we most of us have concluded that honey is not a necessity. It is not classed with the staples. People can get along without honey, and many people do. The fact also is that people use honey for some years and then stop using it for one reason

or another, and don't use it again for a number of years. These things have all got to be taken into consideration to find your proportion.

I didn't intend to make a speech when I started out on this subject, and probably it is a little out of keeping with what has been said. However, I am willing to answer any questions I can on this matter.

The President—I see we have with us this afternoon Mr. Woodman of Grand Rapids, Michigan. We will be glad to hear from him on whatever subject he is prepared to talk.

Mr. Woodman—That is something I never do, talk; excuse me.

The President—We will be glad to hear from you, Mr. Woodman.

Mr. Woodman—I guess you will have to excuse me. Thank you very much for your invitation.

Mr. Wheeler—Mr. President, before we leave that subject, that is a nice little point of Mr. Barnett's about the talking of a poor crop helping or hindering the sale of it. I have wondered a good deal about that, whether it would do it or not. It is a very nice thing, when you have sold honey at a certain price for years back, and have had to raise it, to say that there is one-tenth of a crop. People are quite inclined just now to accuse everybody of being in a trust and boosting the price, because everything else is high. It is a nice point there, as to whether to tell the customers that it is due to a short crop, or "We are going up in price because other foodstuff is going up in price." I would like to hear from some of the other folks about it. It is a question in my mind whether it is a good thing or not.

The Secretary—In regard to that short crop proposition, I find pretty near everybody I come up against, if I tell them there is a short crop, they knew it before hand. I wonder where they get their information? That is what kind of perplexes me. They all expect to pay more for honey. They all understand that there is a short crop. Where do they get their information? I would like for somebody to answer that.

Mr. C. O. Smith—I don't believe that is very hard to answer. The crop is short. That is the truth, people usually know the truth.

The Secretary—Not always.

Mr. Smith—Not always, but they usually do.

The Secretary—Not in regard to honey.

Mr. Smith—The man who doesn't read knows his locality, and then most of them knew from that source that the crop was short. The man who reads and gets the reports from all over the United States knows the crop is short.

The Secretary—I am not talking about bee-keepers, but I am talking about the consumers. For instance, here in Chicago the consumers never read any of the bee journals; all they get is the ordinary newspaper.

Mrs. J. G. Reichert—The newspapers gave the information this year, that the crop was short.

Mr. Wheeler—I know one way that people know it, the automobile has helped them out. I have known people to go out in the country and take a ride of ten, fifteen and twenty-five miles in automobiles, and buy some honey. They buy it cheap. They buy of you folks that have sold your honey cheap. This year they got their automobile ride and no honey. That is one way they found there was no honey. They go back to the same people they bought from last year and the year before, for a cheap price, and they have come back without any honey. It is surprising how many, many people this winter, more than ever before, have been in the habit of going out and getting honey of the producers and buying it for about half what it was selling for on the market. I think that is one way they find out about it.

Mr. Burnett—What Mr. Wheeler says about it is quite true, and locally that explains to Mr. Bull, I hope, why the information has been spread as it has been, and generally, through the country. And now, if no one is going to ask any questions, I will go on with my story. As a matter of fact, your committee on prices of honey would have been in the soup, so to speak, but for one fact, and I see Mr. Dadant knows what I am going to say. There was a demand this year for honey from sources that we never had before. That's why the committee has won out. Our prices would have been a big hindrance, in a way, to people who had honey, if it had not been for what we term a foreign demand. The foreign demand came early. It came before the crop of honey was made in this part of the world, and it came from Europe. It came in quantities that required a whole steamer at a time to take it. That took off of this market honeys that before have never been sold, in my experience in the last twenty-five years, at over five and six cents a pound, and seven cents, and they paid as high as fifteen cents for it. We recently have sold here a few carloads of honey that was simply unmarketable, so far as being able to use it was concerned, for

sixteen and one-half cents per pound, per carload. That has cleaned the honey out of the country.

Now, we are unable to get prices for honey for only a few people who want to use honey, and also because, not of the short crop at all, but because everybody else pretty much who has had anything to sell is asking a higher price. They naturally expect to make a higher price. Fifty per cent if not more of the people who have come to us for honey say, "Of course, everything else is higher, so is honey." And they make no complaint about the price, they take it. But if you are going to get it into your head that because you are getting these prices that are prevailing now, for honey, for some seasons in the future, you may be disappointed. And this unusual and tremendous demand is taking the honey out of the country. As an example of that I would cite the Imperial Valley, California, case. The honey in that territory was cleaned out in the month of June, a honey that has dragged on the market from year's end to year's end, since it began to be produced there. Then, again, it has crept to what we might call the high-water mark in price, taking a price of fifteen or more cents a pound. The recent quotations that I have, they are asking now in Cuba, furnishing your own container, one dollar and seventy-five cents a gallon. The honey is cleaned up. There is more of a supply around here than there is anywhere else in the country. We here this week shipped honey even to Vermont.

Mr. Hassinger—Mr. President, it seems to me the object of the price committee is to foresee and get a report on the standing of all these conditions; and the prices are based on those conditions. That is what we have the price committee for, and to find out these conditions, things the other producers would have no means of finding out, and that is what the prices are based on. Am I right?

The President—It would seem to me that the purpose of this committee is not to boost prices beyond reason, but is to instruct the small bee-keeper or the uninstructed bee-keeper in regard to what the prices ought to be. Now, Mr. Burnett is doing a wholesale business. He buys and sells in large quantities in the wholesale trade. The price is controlled largely by supply and demand there, but when you come to the retail trade, supply and demand doesn't really have so much to do with it. If the people have the money and there is the honey and they want it, they are going to buy it, if it costs ten cents or thirty cents a pound. It doesn't seem to make very much difference. I find that sometimes when I ask a good price it sells better than at a low price, for sometimes people are suspicious of honey when it is sold away down low. They think it is something else. I think we ought to keep clear in our own minds that it is not to boost prices beyond any reasonable amount, but to inform ourselves and our brother bee-keepers as to what the price ought to be, especially in a retail way.

Mr. Wheeler—There is another nice point that I think ought to be considered, and that is the quality. You can't go to your neighbor, ten miles away, and ask the quality of his honey and what it is worth. If a man in his district is producing a poor grade of honey and it is poor year after year, if he holds that honey for the price of the finest Wisconsin honey or white clover honey, he will lose the sale of his honey. People have a taste. They know what they like and what is good honey, and if a man in order to throw trade his way has a poor grade of honey, he knows it is pure but it hasn't the fine flavor that some honey has, in order to dispose of that honey he must send it to a wholesale house, and he has to put the price down. I do not see how he is to get around that. That is a question that would come up in every case, I should think. It depends on the quality, and every man as far as I know is glad to get all he can for his honey, but he feels that he had better sell for ten cents a pound than to ask twenty and not sell at all.

Mr. Flood—The Government is putting out a price list every month, that seems to answer the purpose, free to every bee-keeper that asks for it.

The Secretary—To answer that I might say that price list goes to the wholesale end of it only. You can't get the retail prices from that. It gives the wholesale prices. What do these little bee-keepers care about wholesale prices? For instance, they ship to Mr. Burnett and sell for ten cents, but we do not care, they don't hurt us a bit. If we sell for twenty-five cents and the retail dealer sells for ten, that is what hurts us. That price is good as far as it goes, but it doesn't go far enough. You remember a year ago when Mr. Bruner got up his paper and says, what is honey selling for? Members came to this convention and sold honey at retail as low as ten cents, and up to twenty-five cents, an average of fifteen cents a pound a year ago. I would like to ask anybody here that sells honey at ten cents retail, a pound, to stand up. You won't have to

look very far, this year, to find bee-keepers selling honey at ten cents a pound. I have heard of several cases. Michigan and Wisconsin both sell it at fifteen cents, retail, in ten pound pails.

A Member—That was done in Cook County, last year.

The Secretary—Yes.

Mr. Stewart—What you going to do with those fellows around in the country, with a few hives of bees, that sell it for five cents a pound less than you do—kill them?

The Secretary—You can send a price letter from the committee.

Mr. Stewart—They wouldn't care a "cuss" for them.

Mr. Dadant—I think that the circulars sent out by the U. S. Government has a very good effect, has very good points in it. If they give a man the wholesale price, it seems to me any man with any kind of sense will not sell under the wholesale price given by the Government. Usually the man who drops his honey on the market sells it wholesale. He may have only a hundred pounds, but he wholesales it. I think that is the man you fear the most. A small bee-keeper will bring his honey to town and whatever price the grocer gives him he takes. If that man can get a circular from the Government and see that honey is selling for fifteen cents wholesale, he will be inclined to refuse to sell for less than that, and it certainly will help a bit, and I think we ought to do all we can to get that list in the hands of every bee-keeper.

The President—That is what I say.

The Secretary—That is the way to do it.

The President—One difficulty we have is the fact that so many retail their honey at wholesale prices. They read in the Government list that honey is worth fifteen cents, they immediately go around town and peddle it, delivered in one-pound lots, at fifteen cents, and if they can't dispose of it readily, they sell if for even less than that. There was a lady over in our town, who was advertising honey a year ago, comb honey, delivered, for fifteen cents a pound. I tried to buy the whole lot, and she wouldn't sell it to me at fifteen cents, she wanted more.

A Member—She liked to deliver it.

The President—She is just one instance, and there are hundreds of people who will sell at retail and deliver in five pound lots at less than the wholesale price.

Mr. Haan—Mr. President, I bumped up against several snags in selling honey, and I find that one of the snags is Sears-Roebuck & Company. When I came around with my honey last year, at twenty cents a pound, they said, "Oh, I got you beat." I said, "Where do you get your honey"? "Sears-Roebuck." "What do you pay for it?" They didn't tell me what they paid for it, but they got it a little cheaper than I could sell it for. At another place there was a man from Wisconsin who sold, I believe, at twenty cents a pound, last year, selling at retail, and this fellow came around and says, "Oh, I can do a lot better than that. I can get it delivered at twelve cents a pound, by parcel post, from Wisconsin." And he didn't give me any address, either, but he said he could get it from there last year, when I was selling it at twenty cents.

Those are some of the snags we run up against when we go around trying to sell honey. Those people up there when they know what honey is bringing down here, I don't suppose for a minute that they would sell their honey down here, for any such price as that, but nevertheless we have to contend with it until they do get those price lists.

At this point a motion was made and carried to join the State Association in a body.

The President—The question is asked how can we get sugar for spring feeding?

Mr. Stewart—Buy it (laughter).

Mr. Kanneberg—You can't buy it.

The Secretary—That is easy. It is according to how big a town you are in, but go to each store when you go down town, and buy all you can get and hoard it up. You can buy two pounds at a time. If you buy two pounds a day from now until spring, you will have enough.

The President—It is a question whether it pays to buy sugar and feed bees at this time of the year. Wouldn't it be cheaper to wait till spring and get your bees from the south, and be patriotic and not use the sugar?

I have one more question here. "When you have a lot with about ten to twenty-five colonies of bees, and one happens to swarm without your seeing it, I would like to know which is the quickest and surest way to find out what colony the swarm came from?" The gentleman would like to know how to tell when a colony has swarmed.

The Secretary—Mr. President, it depends on how soon afterwards you get there. If you get to that yard within ten or fifteen minutes after they have swarmed, look in front of all the hives. In a swarm all kinds of bees go out, and a good many bees go out of that swarm that can't fly yet. You will find them crawling on the grass. After they have been out an hour

or so, there is no way in the world I know of, outside of that.

A Member—Mr. President, I tried Mr. Bull's plan of looking in front of the hives for the young bees that can't fly yet. If you are too late to find out that way, you can depend on other circumstances. If there is a flow of honey and the bees are working in the supers, sometimes you can tell by looking in the super and finding that the bees have all gone out of the super, then if you will take out the supers and look below, you will find the queen cells there. That is the only way I would know.

Mr. Russow—Mr. President, I find out—I don't speak very good English; you must excuse me—I found out last year. I have been in the bee business for about eighteen years, and I never feed them..

Mr. President—We have another question: What is the average price of comb honey and extracted honey, retail? It would take some investigation to find out, I suppose.

The Secretary—I suppose we could take a roll-call of those that are here, and find out. That is the way to do that.

The President—Mr. Bull has suggested that I call the names of some of the parties here, and have them name the average retail price of extracted and comb honey in his locality. Mr. Smith, what are they selling for with you?

Mr. Smith—Twenty-five cents a pound, for extracted.

The President—And the comb?

Mr. Smith—I don't know.

Mr. Haan—The same.

Mr. Hassinger—It will probably be sixteen cents.

The President—What do you get?

Mr. Hassinger—Not much more, two or three cents more on an average.

Mr. Wheeler—The retail price is about twenty-five to thirty cents, in a small way.

Mr. Sivert—I have none to sell.

Mr. Kanneberg—Eighteen cents, extracted.

Mr. Wheeler—I believe I am too high on the comb honey, as a rule. I sell it from twenty-five to twenty-eight cents.

Mr. Russow—Twenty-five cents—I get, in quantities, and then people come to my house. I get seventy-five cents now, that is for three pounds, extracted.

Mr. Coppin—In my section the comb honey is retailing at twenty-five cents and the extracted honey at twenty cents.

Mr. Baldridge—In my locality the price is twenty-five cents the year around, for either, give them their choice, but I sell my honey at net weight, my comb honey at net weight, no wood.

Mr. Fischer—I think about the average is twenty-five cents for the extracted, for the comb I don't know.

Mr. Simmons—I sell three pounds for seventy-five cents, extracted. Comb honey I hardly know it when I see it, it is so long since I have seen it.

Mr. Blume—Seventy-five cents for three pounds.

Mr. MacNeill—The same.

The President—I think this is sufficient, so that we can get a general idea of the average retail price.

The Secretary—You didn't ask me yet (laughter).

The President—Mr. Bull.

The Secretary—Thirty to thirty-two and a half.

Mr. MacNeill—The champion price-getter!

The Secretary—I get it.

Mr. MacNeill—I know it.

Mr. Hassinger—Mr. President, for the benefit of those that do not know that I am two hundred miles north of here, that we had a large crop of honey, I want to say in regard to a number of bee-keepers in our locality, that they sold honey at ten cents a pound, but they didn't know what it was worth. When those letters came from the price committee, they thought it was outrageous, and that they were overdoing it. I sacrificed 50 per cent of my local trade to raise the price. I staid from two to three cents above them, and they gradually followed me, till now some of those who sold at ten cents are selling at fourteen. That accounts for the difference.

A Member—Why don't they wholesale it?

Mr. Hassinger—They wouldn't sell it unless they could get more than they get at retail.

The Secretary—The average of that price is twenty-three and seven-tenths cents a pound.

The President—In my town the comb honey retails for thirty-five cents, extracted honey for twenty-five cents.

A Member—I paid seventy-five cents for two pounds and four ounces in Chicago.

The Secretary—I get sixty-five cents for two pounds.

A Member—Airline honey?

Mr. Kanneberg—Airline honey has been selling for forty-eight cents a pound in my town, comb honey.

Mr. Smith—What does it cost to sell honey at retail?

The Secretary—I believe twelve cents a pound at the present time.

The President—It depends a good deal on whether you canvass or simply take the order that comes in. Mr. Bull canvasses for his. What honey I sell I receive orders for as they come over the telephone, by mail, or otherwise. I deliver in my own town, which is not a very large one, and it doesn't cost me as much to sell honey as it does Mr. Bull.

Mr. Smith—Perhaps you are not counting the expense you had in building up this trade. There is a cost there, that is permanent. It costs to get your customers. About the first season I grew any honey to sell, I would rather produce the honey than to sell it at retail.

The Secretary—I would too.

Mr. Smith—So would anybody else. I think I hit on a plan that was quite economical, in selling honey. It cost me an hour's work to get one hundred names and addresses of people living in the locality around me. There are fifty thousand people living within a mile and a half of me, and then it took about two hours to get the telephone number. Then it would take some two or three minutes to get them on the telephone and sell them a quart of honey, then the honey had to be delivered. I believe I sold to half of the people I called. Of course, it cost me probably fifteen cents a pound to sell that honey, and next year it won't cost so much, for that work is done. For about four years repeat orders come in, and that doesn't cost so much, but I believe it costs as much labor and effort to go out and retail your honey as it does to produce the honey.

The Secretary—Fifty-fifty.

The President—We have some more questions. What is the best form of advertising for local retail sales?

Mr. Stewart—In your town paper.

The President—Has anyone tried advertising in the papers or journals that have a large circulation all over the country? I see there are a few people who are advertising in journals of various sorts. The Airline people of course advertise. I have usually been able to sell most of my honey locally. Once in a while, when I feel like it, I put a few lines in our local paper. Everybody in our town knows I sell honey. They call up, and it keeps me pretty busy through the fall. Sales sometimes run as high as two hundred dollars a week through the fall months, just the orders that come in without any canvassing or soliciting, with very little advertising. Advertising probably for the whole season wouldn't cost me over five dollars. I have a mailing list that is gradually increasing. People buy honey and tell their friends about it, and then they send for it. I sell probably half my honey that way, sending it out by parcel post and express and freight.

Mr. MacNeill—We keep a mailing list, and send them a letter at the beginning of the season.

The President—I have a circular letter that I send out, naming the prices for different packages, five-pound pails, ten pound pails, six and twelve pound, gallon and half-gallon, screw top cans, also prices for cases of six, and the price for the sixty-pound cans.

Mr. Wheeler—If you can get a pail that doesn't leak.

The President—Five pound pails are not apt to leak in transit. The ten-pound pails should be soldered; I put a little solder on each side of the cover.

Mr. MacNeill—Can you send those letters for one cent under the new postal regulations?

The President—Excepting first-class matter, the rate remains the same.

The best honey advertisement is the honey itself. Put out a good quality, put it up in good shape, and the orders will continue to come in and increase in number.

Mr. Stewart—Doesn't a man's trade advance as fast as his knowledge of bee-keeping advances?

The President—Well, yes. Mine has.

Mr. Stewart—The majority of them will, a man's trade will come up as fast as his knowledge of bee-keeping advances.

The President—Some years I have more honey than I can sell, other years not enough, but it averages up that I sell just about what I can raise. I have never made a practice of buying to any great extent; I never have sold very much in a wholesale way. If no one has anything and you would care to hear it, I might give you a little talk on feeding bees, getting off from the present subject for a time. How many would like to hear something concerning feeding bees?

There are two purposes in feeding bees. One is to give them food to prevent their running short of stores, and the other is to stimulate them to breeding. I believe that the majority of the most advanced bee-keepers agree that it doesn't pay to feed bees in the spring for the purpose of stimulation, that the better way is to give them plenty of stores in the fall, so that they will have enough to last them over the winter, but when rearing queens it is necessary to feed for the purpose of devel-

oping the queen cells properly. For the purpose of queen rearing, feed slowly. To feed intermittently, as you must do with some kinds of feeders, as the Alexander, is practically of no use in queen rearing.

An experiment carried out here a few years ago with the Alexander feeder, was this: There were about a hundred stands of bees in the apirary and about one-third of them fed every evening for three weeks, beginning at the close of the fruit bloom and ending with the beginning of clover. They were given each evening about a half a pint of food, composed of water and honey.

At the end of the time there was apparently very little difference in the amount of brood production; in fact, if there was any difference, it was in favor of those not fed. Now we have in the last few years new methods of feeding bees, which require less labor and are better in many ways. It has been found that in place of a little pepperbox feeder one can take an ordinary ten-pound honey pail such as used for retailing honey, and punch small nailholes, one or more, in the cover, and insert it over the frames.

There are still easier ways than that. My preference is to use sealed combs of honey. We usually get a fall flow and combs of this dark honey, which is not so readily salable as the white honey, are reserved for fall and spring feeding, about two combs for each colony wintered over. Before the bees are put away I go through those colonies, and lift the hives, and if any are found light in weight I move the cover and take out the empty combs and put in full ones, bringing them up to the proper weight. This is the quickest and easiets way one can feed bees.

Mr. Stewart—Would you put those combs in the center of the brood?

The President—No sir, at the sides. I have observed this, also, that in the fall of the year, after the bees are done storing, if the weather is suitable and there is uncapt honey in the supers, the bees will carry the honey down. I found also that the bees not only carried down honey when short of stores but that they also carried it in from the outside combs, leaving them empty. Then to feed in November it is easy to insert the full combs in place of the empty ones, which are at the outside, while bees are clustered near the center. One can go through an apiary of 100 colonies, selecting the light ones, and do all the feeding necessary in less than a day. Usually I keep over a considerable number of these filled combs and in the spring again go through them, giving each light colony sufficient stores to last it through. Then between fruit bloom and clover is another critical time when bees are liable to starve and should be watched very closely, especially if the weather is unfavorable.

In cases of emergency when bees are starving they may be fed by raising the hive front and pouring in a dipperful of diluted honey or sugar syrup.

Mr. Wheeler—I have a little different scheme for feeding, and in an emergency like that, two or three years ago, there was a time in the latter part of May when the bees were starving. I began to find them dying around parts of the apiary, and I just went to wrok and collected up a good lot of sugar syrup. It happened that cold spring when there wasn't a bee flying and hadn't been flying for a day or two. And towards night I went out and tipped the hives over on their backs, and after we tipped the hives over on their backs on the ground, in their tight covers, I just turned right in a teacup full of syrup on them, put on another cover I had on top there, and let them stay there till they had that all taken up. I saved an apiary or two that way. It was done very quickly, and the bees of course licked that up in a hurry. It was where they could get it, and it was warm. My, how they came out of those hives! You know how they do. Another way I do when I have old combs left, I use an extra super four and a half inches deep. In the spring I am very careful not to disturb the cover, and not to let any air in the top.

I store away in the fall all my extracting supers full of honey and partly filled, in a warm basement, and where if it is taken care of it will not candy. Some bee-keepers don't know that. In the spring I set the super under the hive. The bees in a few days will find the honey, take it out and carry it up. It is all done without moving the frame, without disturbing the upper part of the hive.

Mr. Stewart—At what temperature will honey keep from granulating?

Mr. Wheeler—I couldn't tell you that. I keep it by a heated furnace, the temperature of living heat, I should say.

Mr. Roehrs—Sixty or seventy degrees, yes.

The President—That is a good point made by Mr. Wheeler, in regard to putting the super under the hive instead of on top. It saves breaking the cover loose and letting the heat out.

Mr. Roehrs—Mr. President, I notice that several years ago this Society indorsed Mr. Thaler's way of feeding; I sup-

pose you know they have been selling that feeder. I put confidence in what this Society at that time indorsed, and I bought several of the feeders. I like them. In the first place, I never have to break the sealing at the top of a hive, so we save all the heat. I like to have my bees packed in there as solid as possible in early spring, then I can regulate the feeding. I can feed light or I can feed heavy, and I am satisfied with that. I use a quart bottle, and I always can see whether they need more feed or not. There is just one danger. If you use a quart bottle and the frost catches you, you might lose the bottles, but at that time as a rule we do not need to feed. Otherwise I like this feeder better, and I have tried the others. In other cases sometimes I couldn't regulate the feed, and then again I could not see whether they needed more, but this Thaler feeder gave me the best satisfaction. Now, in regard to this pepper box feeder on top, I must say it looks good to me, but I am afraid I would lose too much heat by putting it on top of the hive. In feeding in the fall just for storing up, the danger is not so great as in the spring, but I am afraid for the spring feeding.

The Secretary—I might say I overcome that danger by conserving the heat on top. I just take an ordinary piece of roofing paper and cut a little hole right in the center, and put your feeder over that hole.

Mr. Stewart—I feed mine out of doors between white clover and fruit bloom.

The President—We would like to have you tell us just how you do that, and what your success is.

Mr. Stewart—Well, it makes lots of bees. That is what I am after.

The President—You put it in a large vessel of some sort?

Mr. Stewart—Yes, I have a whole lot of Alexander feeders, and they are on two by four's, a row of them, and I go along with feed, just simply all the water will take up.

Mr. Wheeler—Do you wear a veil when you go out to look at them.

Mr. Stewart—I don't go out to look at them.

Mrs. J. G. Reichert—May I ask how you prepare your sugar and water, as you call it?

The President—Put the water in a vessel and stir in the sugar.

Mrs. Reichert—I made it up for my husband, and he said I shouldn't put the sugar in until the water had reached the boiling point.

The President—It will dissolve more readily if the water is boiling, and then you can let it cool.

Mrs. Reichert—My husband said I would burn the sugar if I put it in first before the water was boiling.

The President—If you put the sugar in first, it will sink and is liable to scorch. Put it the water first, and stir in the sugar slowly. It isn't absolutely necessary to boil the water, unless you want to put a great deal of sugar into a small amount of water. You can dissolve about two parts of sugar to one of cold water.

Mrs. Reichert—Then it isn't necessary to boil it five minutes?

The President—Not if you are using sugar. If you are using honey, it is a good plan to boil it, in order to kill any foul brood germs.

A good way to dissolve the sugar is to use boiling water. Pour it on, it will dissolve very readily if you stir it a little. You don't have to put it on the stove.

Mr. Smith—A prominent bee-keeper a year or two ago said he had the best success in feeding for breeding purposes, to mix it in the proportion of about one to six or seven, that is one part of sugar to six or seven parts of water. Make it just as thin as the nectar is that they get out of the plant.

Mr. MacNeill—One authority says ten or twelve.

Mr. C. C. Smith—That takes less sugar for the amount used, but it would seem there is some good reason for that.

The President—In regard to Mr. Smith's question in feeding for stimulative purposes, you do not mix it in the same proportion as in feeding for stores. In feeding late in the season for stores, mix in all the sugar you can with water. If you are feeding for stimulating purposes, use all the water you can, so long as the bees take it up.

Mr. Kanneberg—Mr. President, how much heat would it take to boil the honey so it wouldn't hurt the bees any to take it?

The Secretary—Water boils at 212 degrees.

Mr. Kanneberg—I mean the honey.

The President—I presume the boiling point of a honey solution would be higher than that of water alone. The temperature would depend upon the amount of honey you had, and it is said that if you mix it about half and half, water and honey, and then boil it for fifteen minutes or more, that it usually kills the germs, but it is safer to boil it longer if you have any foul brood.

Mr. Stewart—Won't two or three minutes do?

The President—It has been tried, I understand, by Dr. White.

Mr. Dadant—Dr. White said that after fifteen minutes at 212 there were no live germs found.

The President—There is some danger that the vessel may have portions of it which doesn't rise to that temperature. If one is a little careless, there may be parts of it that are not heated to the 212 degrees, and in that way the honey might transmit the disease germs.

Mr. Smith—I would like to ask a question that is rather scientific. I would like to know if the weight of the egg of the bee has ever been estimated. How many will it take to weigh an ounce? Has it ever been estimated?

Mr. MacNeill—There is no trouble about weighing or finding out the weight of one egg, if it were necessary, with a chemical balance.

I would like to know the experience of the members with the pound packages of bees from the south.

Mr. Simmons—Mr. President, a year ago last spring I had twelve or fifteen packages from the south, two-pound packages including the queen, and they did well. They much more than paid for themselves in the following summer. They arrived in very nice shape. I had brood combs for them, got them about the seventh or eighth of May, and they went right to work.

COMPARISONS.

100 colonies wintered outdoors.
100 wintered in the cellar.
100 two-pound packages of bees.

(By Edward Hassinger, Jr.)

It is quite evident that in regard to bees and all the factors involved in honey production, one cannot speak with mathematical exactness. However, a detailed colony record was kept in each yard and close observations taken at all times. The comparisons as outlined are made without favor or prejudice. Each 100 colonies were in a different yard, or location, within a radius of ten miles. The locations are practically the same as far as plants and conditions for an equal honey flow was concerned. In this article the comparisons are limited to the amount of surplus honey produced in each yard, and evidence to show why the great difference in the crop, and evidence to show why the crop could have been equal in each yard if the chances had been equal (on the factors considered in the present article) and what it would have cost to make the chances equal, and evidence to show that it would have paid to make the chances equal.

In referring to the figures always bear in mind that the comparisons are limited to the above mentioned factors. A comparison of the different hives; the total investment in each yard; and the expense of operating each yard, in time, labor and auto; all vary considerable, but are not essential to balance the present factors as compared.

In giving the net surplus per colony and per yard it is necessary that a basis be taken for all the yards as one whole, that is, because all the yards are not wintered on the same amount of stores, for instance the yard wintered in the cellar "I operate on shares" the owner of same always winters his bees on 30 pounds of stores, while mine are wintered outdoors and will average 60 pounds and more with a shallow super of extra honey. not because they need it, or use it, but as a reserve fund present all the time, and to be used in case of emergeney. The spring of 1917 proved to be such a spring when the emergency fund paid the interest on the "standing emergency fund" for a good many years that are normal. As Mr. Doolittle says "millions of honey at our house," are always a source of inspiration to any colony of bees at all times.

The basis, that the net surplus is figured on in these comparisons is 30 pounds, for all 300 colonies, for obvious reasons.

As you all know the spring of 1917 was very cold and backward, at least the conditions were such in my locality, that the bees could not make a living for more than one day per week, until the honey flow started in July. On the above mentioned basis the net surplus crop was as follows:

100 colonies wintered outdoors, 16,500 pounds. (100 per cent.)

100 colonies wintered cellar, 9,500 pounds. (57 per cent.)

100 two-pound packages, 8,500 pounds. (51 per cent.)

The difference in the crop was simply due to the difference in the strength of the individual colonies in each yard, and the yards compared with each other as a whole. These comparisons show why the difference in the strength of the colonies occurred in each yard as a whole.

It happened that all of the 100 colonies wintered outdoors had good queens, by that is meant, that all of them produced some surplus. This yard is allowed 100 per cent credit on queens. Of course this yard had protection, being housed in the winter cases. Therefore, 100 per cent credit is allowed this yard for protection.

They also had sufficient stores and some to spare, and of course kept right on breeding regardless of the cold weather; once more this yard is credited 100 per cent on the amount of available stores for use. They were also credited 100 per cent on "time" to build up to full strength before the honey flow. In other words this yard of 100 colonies—wintered outdoors—had 100 per cent credit for all four of the essential conditions required to give the bees a chance to build up to full strength to gather a possible 100 per cent crop under the most favorable or unfavorable weather conditions. The following figures show that each of the factors taken into consideration are always based on the supposition that the balance of the three factors are actually 100 per cent on the basis of the 100 per cent perfect yard of bees. This is necessary to find the value of each factor as compared with the 100 per cent perfect yard.

The value of each factor in each yard—compared separately—with the crop of the same yard, would show how much profit one factor had over another, of total of the same yard, not considering or comparing same with the 100 per cent perfect yard.

100 colonies.
Outdoor wintered—

% credit for queens 100%; crop 16,500
% debit for queens 00%; crop 00 } = 16,500 = 100%.

% credit for protection 100%; crop 16,500
% debit for protection 00%; crop 00 } = 16,500 = 100%.

% credit for stores 100%; crop 16,500
% debit for stores 00%; crop 00 } = 16,500 = 100%.

% credit for time 100%; crop 16,500
% debit for time 00%; crop 00 } = 16,500 = 100%.

100 colonies.
Cellar wintered—

% credit for queens 85%; crop 14,025
% debit for queens 15%; crop 2,475 } = 16,500 = 100%.

% credit for protection 82%; crop 13,530
% debit for protection 18%; crop 2,970 } = 16,500 = 100%.

% credit for stores 90%; crop 14,850
% debit for stores 10%; crop 1,650 } = 16,500 = 100%.

% credit for time 100%; crop 16,500
% debit for time 00%; crop 00 } = 16,500 = 100%.

100 two-pound.
Packages—

% credit for queens 75%; crop 12,375
% debit for queens 25%; crop 4,125 } = 16,500 = 100%.

% credit for protection 100%; crop 16,500
% debit for protection 00%; crop 00 } = 16,500 = 100%.

% credit for stores 88%; crop 14,520
% debit for stores 12%; crop 1,980 } = 16,500 = 100%.

% credit for time 88%; crop 14,520
% debit for time 12%; crop 1,980 } = 16,500 = 100%.

The above figures show that it is only the "debit" factors that must be accounted for to make a balance with the 100 per cent perfect yard. The total debits against the 100 colonies wintered in the cellar are 43 per cent; these are sub-divided into three factors, queens 15 per cent, protection 18 per cent and stores 10 per cent. Each factor is taken up in rotation as follows:

Queens, 15 per cent debit—

Debit of crop in pounds 2,475 at 15c per pound	$371.25
Cost of 15 per cent of 15 queens at $1.50 each, total	22.50
	$348.75

This amounts to $23.25 profit for each queen or 1,550 per cent profit on the investment per year. But queens at $1.50 each should last two years; then at 75c cost or investment per year, the profit per year would be 3,100 per cent.

The 15 per cent of queens referred to in this yard were old queens that failed "a long lingering drawn out failure," and were not superceded until the honey flow, this put them in such shape that no surplus honey was produced by them.

Protection, 18 per cent debit—

Debit of crop in pounds, 2,970 at 15c per pound=$445.50.

This yard had no protection other than the single walled hive body. Supposing that it cost $4.45 to protect each colony with a winter case. The figures show that with the size of the crop produced by the 100 per cent perfect yard—the cases would pay for themselves in one year. However, we know that the cases will last about 20 years, then the first cost must be divided by the period of 20 years, this would amount to 22¼c per year for the cost of protection. With the crop of the same size every year—or as actually compared with the crop of the 100 per cent perfect yard for this season—the profit per colony is $4.23, or 1,900 per cent profit on the investment.

Stores, 10 per cent debit—

Debit of crop in pounds, 1,650 at 15c per pound=$247.50.

It is estimated and presumed in these figures that if each colony would have had and used, 8 pounds more of stores to make them 100 per cent efficient on this factor, and each pound would have cost 15c, the total cost would be $120.00, or $1.20 cost per colony, and the difference as profit on the investment would be $127.50, or $1.27½ per colony, or 106¼ per cent.

The above figures show that it pays to leave expensive honey with the bees in sufficient quantities for all emergencies. "Time and labor of feeding during an emergency would emphasize these figures to an extent that would prove a revelation to most of us; that is, unless your time and labor are not worth anything."

This yard of bees was "on short rations" all spring and apparently and very evidently used more stores than the protected bees, and with no benefit from it as the colonies were no stronger at the beginning of the honey flow than they were three weeks before. I believe and judge from the evidence and observations that I am fully justified in estimating 18 per cent debit against them for lack of protection, and 10 per cent against them for living "on short rations" for two months.

The total debits against the 100 two-pound packages are 49 per cent; these are sub-divided as follows: Queens 25 per cent, stores 12 per cent, time 12 per cent.

Queens, 25 per cent debit—

Debit of crop in pounds, 4,125 at 15c=$618.75.

The queens that came with the 100 two-pound packages were untested and cost 75c each. As the above figures show 25 per cent were not good. Now suppose tested queens had been bought in the first place at $1.50 each and all had been good then of course there would have been no debit against them on this factor. But to make the comparison with the 100 per cent perfect yard, only the first cost or cost of replacement of the 25 per cent "not good queens" will be considered and compared at this time. 25 queens at $1.50 each, totals $37.50, from $618.75 leaves $581.25 or $23.25 profit per queen per year, or 1,550 per cent profit on the investment. However, we must suppose that queens at $1.50 each would be good for two years, or 75c per year is the investment. Total for 25 queens $18.75, equals 3,200 per cent profit on the investment. Remember this is on the basis of the high average crop of the 100 per cent perfect yard, that these comparisons are made with. To fully understand the circumstances, with reference to the 25 per cent of queens above referred to, it will be necessary to tell more about the shipment as a whole. The bees arrived from Alabama on April 27th, 28th and the 30th. You have noticed that this yard is credited with 100 per cent protection, that means, that they were housed in packed winter cases on their arrival. These cases were made in advance, as they would be needed in the fall anyhow. The bees were hived on 6 combs—all of same contained some honey and pollen—an average of not less than 10 pounds of honey for each six combs. Three days after hiving, all were examined and 12 per cent of the 100 per cent of the queens were missing; of course it took about ten days to have same replaced from the shipper. A week later 8 per cent of the (once more full 100 per cent) queens were being superseded, and had so little brood that same (the 8 per cent) were united with others that were comparatively weak in bees. This is brought to a balance in this way, about 10 per cent of the packages, on arrival, had only half of the bees alive, and the 8 per cent were united to these. "I did not ask the shipper to replace same." 17 per cent of the balance of the 92 per cent of the queens—were not good—that is they did nothing to help produce the surplus honey. In other words the total crop produced in this yard was produced by only 75 colonies, or 75 per cent of the 100 per cent.

Stores, 12 per cent debit—

Debit of crop in pounds, 1,980 at 15c =$297.00.

It is estimated and presumed that if these colonies would have had, and used, 10 pounds more of stores per each colony,

and the stores valued at 15c per pound, it would have cost $150.00 for the yard, or $1.50 per colony. This would leave a credit balance of $147.00 or $1.47 per colony, 98 per cent profit on the investment. Time, 12 per cent debit—
Debit of crop in pounds, 1,980 at 15c= $297.00.

By "time" as referred to is meant, the length of time available for the colonies to build up to full strength before the beginning of the honey flow. It is estimated and presumed that if three pound packages had been purchased instead of the two pound, and the extra or additional 100 pounds of bees had cost a dollar a pound; total for the yard $100.00; same from $297.00 leaves $197.00, or $1.97 profit per package or colony, or 197 per cent on the investment of the additional 100 pounds of bees, this would make up the 12 per cent debit against them on time, for the season of 1917. However, with all the factors and fairly favorable weather, at or nearly 100 per cent perfection in my opinion and experience a two-pound package is sufficient to build up to full strength —for my locality—if received in April.

It is evident that the queens represent the largest factor against this yard of package bees. The weather conditions in the South are blamed—at least in part—for the poor queens. If this experience with protection is worth anything to produce honey, it seems that in spite of the cold weather much better early queens could be reared by several hundred per cent with protected nuclei.

In figuring the comparative cost "cellar or winter cases" and expense "amount of stores consumed" it is estimated and presumed that it takes an average of 8 pounds more stores to winter outdoors in cases and it is also estimated and presumed that it takes an average of 5 pounds more of stores to "spring" a cellar wintered colony, without any protection other than the single walled hive body. Five from eight leaves a balance of only three pounds to be charged against the outdoor wintered bees, and be accounted for. At three pounds each 100 colonies equals 300 pounds at 15c per pound equals $45.00, enough to purchase 45 pounds of bees, or one half pound per colony. Year after year my experience has been that the outdoor wintered bees always have had more than one half pound of bees over and above the cellar wintered colonies with no spring protection. In other words considering the above comparisons there is no argument against the so called "expensive winter cases." I sincerely hope that the reader of this article will always bear in mind that the above comparisons in figures are based on the high average crop of this one particular 100 colonies, with all the factors 100 per cent efficient, and for this one particular season. The value of each factor in each yard compared separately with the crop of the same yard, would show the value in profit or loss of any or all the factors, not considering or comparing same with the 100 per cent perfect yard. To get a general average for a period of years one third to one half of the above crop figures may be taken as a basis. As a whole it must still show that it pays to have good queens—"the only way I know of, to get them is to raise them yourself"—protection, and a reserve fund of stores in the hives at all times.

Mr. MacNeill—I am sure we have all enjoyed Mr. Hassinger's paper. He spoke of the cellar wintered bees, and giving spring protection. I would like to ask, does that spring protection consist of the same kind as the outside wintered bees? What kind of protection would you give them, also would you give it to them in the fall?

Mr. Hassinger—The cellar wintered bees had no protection at all.

Mr. MacNeill—You spoke of the investment of a certain protection for these bees. Is it your intention to give them the same kind of protection as the other bees and keep them in the cellar and protect them, fall and spring?

Mr. Hassinger—No, it is just a comparison.

Mr. MacNeill—Would you attempt to give protection to the cellar bees?

Mr. Hassinger—I didn't winter in the cellar. It only costs twenty-two and one-fourth cents a year on a twenty-year basis; dividing that by twenty years. If every year was like this year, there would be a net gain.

The President—I would like to ask Mr. Hassinger in regard to the state of the cellar in which they were wintered. Has that anything to do with it, was the cellar in perfect condition? Were they kept very warm, did they have sufficient air and proper ventilation?

Mr. Hassinger—The season was so late that there couldn't possibly have been the difference on the start. The cellar bees were no stronger before the fruit bloom than three weeks later, due to cold weather, and also because of the shortage of stores, and it seemed that those bees used stores comparativcly much faster than those bees did that had protection.

Mr. Wheeler—How much did the bees cost you in express charges to bring them from the South?

Mr. Hassinger—It cost me about three dollars and twenty-five cents complete, for the bees and the express, delivered.

The President—The question is asked whether it pays better to winter over the weak colonies, feeding them, taking honey from other colonies to feed them, or will it pay better to buy these packages in the spring?

Mr. Simmons—Well, I would say mine cost me within a cent or two of three dollars and fifteen cents per package delivered at my place. All of the queens were good with those shipments. The queens were caged and put in the package, so that the bees were there to care for them en route. Each queen was caged separately. They were accepted, and no losses resulted. I had one shipment before, some two or three years ago, that was a complete failure.

The President—The problem is, is it a paying proposition to allow those bees to die in the fall, in case they are not in good condition, and buy bees in the spring, or winter them over and feed them high-priced feed.

Mr. Smith—Mr. President, it will depend on how the bees are wintered. If you have some colonies that won't winter outside you can winter them in the cellar. If they wouldn't winter outside, I should judge, myself, that it would pay to winter all the small colonies in the cellar. It doesn't require much stores to keep them. They are light on stores, and they will winter in the cellar when they wouldn't outside.

The President—Sometimes they will use more honey if they are light, than when they are strong.

Mr. Smith—I wintered one frame of bees with only two frames in the broodhive, by packing them warm enough.

Mr. Simmons—In a cellar or out of doors?

Mr. Smith—I put them thirty feet above ground, on top of a three-story building, on the roof of a three-story house, and I packed them warm enough. I only had two frames in an eight-frame hive. I put in one frame of bees with a frame of honey, and then I put about six or eight inches of hair felt around that hive, and I made a two or three inch hole for the bees to go out and in, and they came through in fine shape.

Mr. Russow—Last year I had one with three frames in a little hive, and I put them up in the attic, and on the front I fastened a little mosquito netting, so they couldn't get out, and then I tacked something over that in front—only three frames. I put them in the attic, and I did not look at them at all. I was away from them for nine weeks, and they were all right.

Mr. Dadant—Mr. Chairman, in keeping bees in quadruple cases, I have had some trouble with bees drifting; that is, take a light swarm, in the early spring they drift from one to the other, and it is hard to tell whether your light swarm is coming through or not. We found that to be the worst trouble in packing bees. A great many people speak of putting four or two together. Whenever we tried that we had more or less drifting. The trouble is, when you move bees from the spot to which they are accustomed, they lose their bearings. I do not know whether most of you have tried moving a colony six inches, and the bees will come to that place where it stood and then have to look a little while to find the home. When you move your four hives of bees, or two, and move them quick, there is the same trouble: the stronger colony will have more bees, calling the others when they find the home, and the bees of the weaker colony will answer the call and will go there. That is what we call drifting. The trouble is that in drifting it is the weak colonies that lose the bees and the strong colonies gain them. That is why we have never liked to change the position of the hives, and I would rather pack the hives singly than pack them together, on that account.

In regard to wintering, in most colonies we used to raise queens, years and years ago. We quit it because it was so unpleasant. There were so many people who would say, like our friend, Mr. Stewart, "Why, he gave me his worst queen." I think the queen breeder can't prove that his queens are good, and if they are not good, he is accused of dishonesty. But we did raise quite a few bees in nuclei, and we had some very nice little colonies. One fall we had a shortage of honey, and we tried wintering them by covering them, that is to say, the hives we covered with dry goods boxes whenever the weather got bad, and then if a nice warm day came, we would turn the boxes up.

Now, there are a great many things to be considered; the condition of your location, the kind of winter you have. With us bees usually fly once a month at least during the winter. If you have a mild winter and not too much snow, you can winter those small colonies.

I want to say a word for the men of the South. I don't believe those men intend

to get rid of their bad stock. It wouldn't pay them to raise queens that way. If they gave me in the spring the queen of a colony that has been raised the previous fall, I would like that just as well as one raised that same spring, therefore I don't think we should blame the breeder. He may not understand his business, that is possible, or he may not have packed them right, or they may have been jammed on the way, but there are a great many things to consider. I have heard, at several meetings, bee-keepers give very indifferent results, and I believe in most cases the trouble was the condition in which the bees were transported, the way of packing, and the time of the year, that is, the weather in which they were received. I believe that if you find a good shipper, better stay by him, because a good shipper will follow the best methods and usually furnish good queens.

Mr. Stewart—I went to a place last May or June, the man was selling at three prices, and they were all in the same yard.

Mr. Wheeler—Queens, workers and drones?

Mr. Chairman, I would like to hear a little more on that question in regard to the prospects for another year. I think the prospect in Cook County is fine for white clover. On a trip I took to Rockford, a while ago, I saw a strip of country between here and there, where the people I believe will be disappointed. I am afraid the clover has been injured this fall by drouth.

Mr. Gill—I have read somewhere that the cool weather, while it hasn't been favorable for making honey this season, it has been favorable to the growth of clover, is that true? Has the cool summer been beneficial to the clover?

Mr. Smith—It seems to be the popular feeling among the farmers, that the cool weather was favorable.

Mr. Roehrs—Mr. President, it seems to me if we have a cold and wet season, or a cold spring and summer, it is very favorable for white clover to develop, but to say I am sure we are going to have a good crop on account of that next year, I think that is stating it too optimistically, because we do not know how the season will be next year. If we have a rainy and cold season again, where will we get the honey? The main thing is the white clover; it must furnish the nectar. When does it furnish the nectar? It is bringing up so many questions, I think we are inclined to say, "I am sure we are going to have a good crop next year." No one can tell, that is my impression. We do not see that the white clover has developed splendidly this year, and the chances are better than if it had not, that is true, but to say "I know we are going to have a good crop next year," I say we can't tell.

The President—That is what we want to hear is, what are the prospects at the present time. Has the clover developed up to the present time as we would like to have it?

Mr. Wheeler—How is it in your neighborhood?

The President—It is fairly good, this season.

Mr. Roehrs—Mr. President, I would like to ask whether the old, experienced bee-keepers have not found it this way: that when we didn't have any nectar flow one year, that the next year the nectar flow would be so much the better and balance things up again. It seems to me nature has always evened up again. If nature is backward one season with something, she tries to get even the next season. Am I right or not?

Mr. Stewart—It won't on clover.

Mr. Dadant—I don't think that one year will make up for another, but I have heard an old bee-keeper say that when the clover had been destroyed it will average up; if it is bad one year the following year it is generally good. It seems to be that way. However, it is so hard to tell, and I guess most of us don't know. There are lots of people who think we do know, and others who think that we don't know. My impression is that the clover was very nice last fall, and last spring we had no clover.

Mr. H. H. Moe—Mr. President, I am from Wisconsin, and I have been interested in some of the things said in regard to our Wisconsin weather. I want to add a little to that, and also perhaps I had better answer this question before the house at present, in regard to the prospect for clover, although it comes under the head of a weather prophet, and when you come to the weather prophet part of it, it is rather a hard matter. In regard to clover, I used to regard and observe all those things. I have seen the finest kind of a prospect and things were coming on in fine shape. I thought there would be a great clover crop, and then all of a sudden it would fail. We would have chilly weather, cool weather, the weather would not be favorable. In fact, the common crop for honey, the white clover or rather the clover, the Alsike and the sweet clover all go together. The buckwheat seems to require different conditions from the clover. Cold weather, a little bit chilly

weather is required, but plenty of moisture. Clover on the other hand requires warm weather. When it is so hot you can't sleep, it is good clover weather. You want an abundance of moisture to make a splendid growth, and then get the kind of weather we need, so hot we can hardly sleep for the heat. If you can get that kind of weather you will know exactly what the prospect is. So far as the rest of it goes, I am not so sure about it. Bee-keepers tell me that the clover requires one year's growth to start. The next season of growth is the first season for honey. You will not get any honey the first season, but the next season you get the honey. I believe that is generally true. It is that way with red clover, because the seed only commences the second year. That would be the first year that the nectar would be secreted in that case.

I would like to say something in regard to cellar wintering and outdoor wintering, and, by the way, I am tempted to say so now, if you will permit me. It is like the weather prophet, it is purely a guess, and one's guess is as good as another's. And I think most of us bee-keepers are no different from other people—we guess. We are excusable for those things, but at the same time the interesting thing to me is to use some of these things, if possible.

It is human nature that scientific facts are more interesting than fiction. We all know a great deal about fiction, we know how interesting it is. The most wonderful thing is that some of those scientific facts are far above anything in the line of fiction; and if Dr. Phillips' experiments at Washington of late years are of any value, that surely should throw a great deal of new light on this subject of wintering bees. Dr. Phillips maintained that bees do not hibernate. Of course, if bees hibernate like the bear or woodchuck, or anything of that kind, that is different; if the bee simply hibernates and comes out in the spring like the woodchuck or bear, fat or lean, but they come out. Now, if Dr. Phillips is correct—Dr. Phillips has said that bees do not hibernate. I said to him, up in Wisconsin, once, "I want to find out a little more," and I took the ground, and I had Mr. Root back of me, and other great bee-keepers, that bees hibernate, and Dr. Phillips maintained that he would convince Mr. Root that they did not. If you go up through Wisconsin, you know that is a great dairy state, you know the country and what it is up there, a lot of fine barns and fine buildings; if there is anything to those things, it means that the farmers find it important to protect their stock, and I don't think you will convince anybody that they should do that differently. If that is correct, the bee nature is not different from that of any other live stock. If bees are alive and active all winter, they have either got to have a great deal of food to maintain warmth and a warm condition, either that or they are going to suffer terribly.

Some of us that know pioneer conditions in this country know that a great deal of fine stock at one time was wintered out of doors, and done successfully, simply because the feed was abundant, but that is not the condition to-day, and for that reason in the case of live stock the farmers see the importance of protecting the stock, and expecially the cattle, keeping them warm. Now, if that is true with live stock, isn't it equally important that we should protect our bee hives? You all readily understand that I am a cellar winterer. I know they can be wintered out of doors. I have tried it, but if I am going to winter out of doors I will have to provide my bees with a great deal of honey. Some bee-keepers maintain that it takes twice as much honey to winter them out of doors as it does in a cellar. Assuming that I can winter my one hundred colonies in the cellar for fifteen pounds, I have to have at least thirty pounds to winter them outdoors.

Some of you know what a little extra winter clothing will mean to you, and how you suffer sometimes. If the bee is of a live nature as we are, you can readily see that while they may be able to stand cold weather they no doubt suffer greatly, and we therefore ought to protect them.

Mr. Stewart—Mr. President, I used to think I knew how to pack bees as well as the average run of people; I thought I had a cellar, and I think I have yet, about as good as the average run, but I frequently go out among the farmers and buy bees in the spring. When I see how they are wintered and the condition in which they come out, I have made up my mind that I know darned little about wintering bees, and I don't know of a man that does (laughter).

The President—I have always been in favor of cellar wintering and winter my bees that way entirely. I don't like the outdoor methods. My losses are very small, averaging about one-half of one per cent per year. A very important thing in wintering is to see that they are in proper condition beforehand. See that there are plenty of stores, plenty of bees, and a good

queen. Start to get them ready for winter in August. I believe it is a good plan to put them in the cellar early, and before carrying them in it is a good plan to see that they have sufficient stores.

Mr. Stewart—What do you do for foul brood? If you take away that queen and give the queen a cell, will that cure it?

The President—If it isn't bad, it may in case of European foul brood. It doesn't always work, but it is very apt to if the colony is not badly diseased. It is a good plan to attend to them before they get very badly diseased.

Mr. Smith—Do you give that queen to another colony?

The President—I do not think it would be advisable to do that.

Mr. H. T. Fisher—Does anyone here use the Dugwall-Buckeye hive?

The President—Does anyone here have that hive? I beleve it is better, in starting out in bee-keeping, to use a standard hive. If you go into the business extensively later on, you will find you will have to discard these other hives. It is not a good thing to have more than one kind of hive at a time, and that in my opinion should be a standard hive, ten frames, not anything less.

Question—I have one written question here. What is the best method of liquefying candied honey in sixty-pound cans?

Mr. Baldridge—I have a method of melting honey in those cans. I have cans made on purpose to hold one can, made about two inches larger in diameter each way. I melt it with water. I do that because I used to melt four cans at a time and sometimes one of them would leak, and I would have to take them all out to find out which one was leaking. I can handle the one can very nicely on a gas stove, and I like to melt it in that way, with water or steam.

The President—I know from experience it is a good thing to count the nail holes in the bottom of the can before you attempt to melt it.

The Secretary—Mr. President, I might say I have melted quite a little honey, and very little in hot water. I use the hot air system. You can look at it any time to see if it is melted. I like the hot air system. It is quicker and handier. It does not spoil your cans. The cans are not rusted when you take them out like they are in hot water. I believe, too, that you can melt the honey with less heat. You can take an ordinary oil stove or gasoline stove and melt eight or ten cans at one time, melt them perfectly, no danger of overheating and you do not have to watch them. You can set your cans in and go about your business, and let them do the work.

A Member—What temperature?

The Secretary—I do not go as high as most of them recommend. I run about one hundred and twenty; I have the can so I can handle it with my bare hand when it is finished. That is under one hundred and twenty.

Mr. MacNeill—What kind of a container do you use for the cans, or is it an ordinary galvanized tank?

The Secretary—I have a tank that will hold twenty-two cans, if you want to melt that much at once, and I have a small one.

Mr. MacNeill—Just open at the bottom, on the gas stove?

The Secretary—You can use a gasoline or oil stove. You will have to put your stove underneath. Of course, with ordinary city gas, just put your burner right in the bottom of the tank. For a sixty-pound can you need a tank thirty inches wide and thirty inches deep, and that will take about fourteen or fifteen inches of the tank for the can and leave about fifteen inches of space underneath the can. You don't want your heat too close up. I use a tank that is three feet wide and put a row in each side. My small tank has one burner in the center, it is four feet long and holds eight sixty-pound cans. I can run that tank just fine on a one burner oilstove.

Mr. MacNeill—How long does it take?

The Secretary—Twenty-four hours. If you want to turn on the heat faster, you can melt it quicker, but I would rather use the slower heat and not melt it too fast. I have melted it in hot water, running it up to one hundred and twenty-four or eight degrees; then it takes about fifteen hours. But you have to watch them, and there is the danger of heating that honey so hot that you might injure the flavor. Afterwards it is poured into a settling tank and stands over night and it will be as clear as a crystal. Then you can run it off into your packages in the finest shape. You want to let the honey cool down to one hundred degrees or less, before you fill your packages. If you take it when it is cold it is too slow. If you can get honey right, about 100 degrees, it will handle just fine.

Mr. MacNeill—How long before that honey will candy again?

The Secretary—If you keep it warm after it is filled, so that the air bubbles all get out of it, it will keep for a long time. If placed in tin pails, it will stay warm longer than if it is in glass, on account of the glass being so heavy that it will cool honey down

quicker than tin will. If you can put that glass in a tank or some place where it is warm, for a few hours after the honey is put in it, it will stay liquid for a long time. I have a sample of Airline honey that I bought here two or three years ago, when I was here in Chicago at this convention. There are a few granules of sugar on the bottom, but the rest of it is fine as can be, liquid. But that is the secret of keeping honey from granulating, heat it and get the air out. If you take the honey pump and pump it full of air, it will granulate about as quickly as you can turn around. Get the air out of it, and it won't granulate for a long time.

The President—I might say that I have used a similar system, and I have taken it out and put in the hot water. The greatest difficulty, or one of the greatest difficulties is the fact that the top of the can heats much hotter than the bottom of the can, and in running twelve or fourteen hours, often times the bottom will not be liquefied while the top of the can will be overheated. It is pretty hard to have ti so one can go off and leave it, without danger of overheating the honey. I have one of these tanks holding six cans, that I would be glad to sell.

I would like to hear from Mr. Dadant in regard to his method of liquefying honey.

Mr. Dadant—I don't think that my method is any better than yours. It is very similar, but I have heard of better ways. If I were melting on a large scale, I think I would use another method. The principle is that honey should be allowed to remain hot as little as possible, and it should also be heated as little as possible to secure melting. Now, if you can find a method by which your honey as soon as it is melted will get away from the fire and get away to a cool place, that I think will be the best method. I have friends in the west who have secured very good results melting honey, and that is their principle. Heat it so that it will melt without very much heat, and as soon as the honey is liquid enough let it run out of the can to a place where it will cool off. I don't know, I wouldn't assert that that is the best way, but that is the idea, the suggestion.

The President—If the cans are inverted in that tank it doesn't liquefy, it is granulated to some extent as it runs out, and then you have to give it another heating in order to finish the job.

The Secretary—I melt honey with same amount of heat from start to finish. When the heat is turned on the cans of honey they will gradually get hotter till they are finished and I aim to have the temperature about 120 degrees when the honey is finished, being melted.

Mr. Dadant—I don't believe you would keep the essential oil in the honey if it was heated that high.

The Secretary—Another thing is, is it best to keep the honey sealed up tight? I keep my cans sealed in the tanks. I take a pipe wrench and tighten those caps just as tight as I can get them.

Mr. Dadant—Is there no expansion?

The Secretary—No, they will not expand enough at one hundred and twenty degrees to do any harm. There will be a little bit, not very much unless your can is filled very full. When I fill 60 pound cans I leave them a little bit short of 60 pounds to make them convenient for emptying. When that honey is dumped into the bottling tank, there is always more or less scum on honey when it is heated, and that scum forms a blanket over that honey. You draw the honey from the bottom and seal it up. How is that honey going to lose any of the oils? It is practically sealed up from the time it comes away from the bees until you deliver it.

A Member—I fail to see why there isn't any expansion. I have always found that when I put 60 pounds in a can the can is full of honey and I have got to take out about a half a pint. If I don't take out about a half a pint, it will run out. If I don't take it out, I always loosen the caps.

The Secretary—Tighten the caps and it won't run out. You understand a 60 pound can will spread a little bit. I have melted thousands of them and never bursted one of them.

Mr. MacNeill—I believe it is claimed that the Roots have heated honey for three days, and if they do that and keep it at a temperature between one hundred and twenty and one hundred and thirty, it won't granulate for one year. That is it, exactly.

Mr. Dadant—Mr. President, I take exception to that statement. That is making it too emphatic, too positive. I think what keeps the honey from granulating is the absence of water. I went to a meeting some years ago, where Mr. Root showed us evaporated honey that had not granulated, and he said it was because it was very ripe. I thought he was wrong, that he was mistaken, but I eave learned since that he was right; that is, if the honey is very ripe it will not granulate so readily, and I think if your honey evaporates some it will be less likely to granulate. I don't think the lenght of time it is liquid has so much to do with it.

Mr. MacNeill—That was a regular investigation they made, Mr. Dadant?

Mr. Dadant—They might not have had the same grade of honey all the time.

The Secretary—Was that honey closed up air-tight, or was it open?

Mr. MacNeill—I understand it was closed up.

The Secretary—If you can have the can sealed up air tight, there won't be any evaporation.

Mr. Snider—Before we adjourn, we have another man in the audience I would like to hear from, in regard to liquefied honey who has had considerable experience with that, and that is Mr. Woodman, of Grand Rapids. We would like to hear from him on liquefied honey.

Mr. Woodman—Mr. President, our experience in liquefying granulated honey has been that we should heat it at about a temperature of 140 degrees, depending somewhat on the style package we put it in. We also find that different kinds of honey will stand more heat than others. For instance, raspberry won't stand near as much as clover or some other kinds. We liquefy in hot water tanks and ordinarily take about seven hours, run the temperature up to 140, sometimes 150 or 160. The honey is dumped into a dumping tank and runs from there into a bottling tank that also is heated, we figure, about 130 or 140 degrees.

The President—I think the time required for honey to granulate depends somewhat on the kind of honey. Some honey will not granulate for a long time, and other honey will granulate very quickly.

Mr. Gill—I think Mr. Haan made a point in his talk a year or so ago, that it was getting the air out of it. I think there is a great deal in that. Let the air rise to the top and escape in the form of bubbles, and the honey settle down. Of course, that has been a principle that has been taught for a good many years, that honey extraction separated the particles of honey in such a way as to let the air into them, so that when put into cans it would granulate sooner on account of the air. I don't really believe that it hurts it much to stand for ten hours quite hot, and I rather think there are some people that are heating their honey as it is being bottled. They heat it in a hot oven, keep it there for three days, and it keeps well.

The Secretary—It certainly will.

The President—I think it is a pretty well known fact that if you heat honey in a vessel and do not pour it out or stir it, it will keep a long time. If you pour that same honey out into another vessel and get air bubbles into it, it will granulate very quickly. I had some honey a year ago that we poured into the bottles cold, and heated the bottles, and I have one or two of them yet that have not begun to granulate. That same honey if poured cold into a vessel would be granulated in a week.

Mr. Woodman—That is the point exactly. In bottling honey you must do it in such a manner as to force out all the air bubbles. You want to heat it up to a certain temperature, so that all the air bubbles will be released.

The President—It isn't necessary to keep it hot forty-eight hours, either. To keep it hot twenty minutes is sufficient to take the air out of it, so that it will not granulate for months.

Mr. Wheeler—Do you think that the length of time it is hot, injures the flavor?

The President—Yes, sir. Better not keep it hot too long, expecially if it is open to the air so the odors can pass off.

Mr. MacNeill—Did you ever have a can to burst, Mr. Bull, by expanding?

The Secretary—I never did.

The President—There is no question but what the honey will expand when you heat it, but it will not expand so much but what the can will spread to some extent and take up this expansion.

Mr. Wheeler—Then you don't take the top of the can off?

The Secretary—No, you understand it expands with the granulation, don't you? You know if you take a barrel and fill it full, and drive the plug in tight, it will pull the plug out or burst the barrel. I don't believe honey will expand any more at 120 degrees than it will in granulation. I have seen many 60 pound cans bursted by granulation.

A Member—How much room should it have?

The Secretary—It should have a little bit, at least a pound to the can. I allow two pounds for convenience in handling it. I fill about fifty-eight pounds to the can for my own use, where I liquefy them.

Mr. MacNeill—Water is supposed to expand 10 per cent in freezing. suppose honey does the same thing.

The Secretary—I don't know as it will go ten per cent, but it does some.

Mr. Moe—Someone has said it is water that causes the granulation, not the air bubbles, and that brings up another interesting point. Is it the air bubbles that make that trouble, or is it the water? Those things we can guess at, but the

better thing would be to find out through experiment or investigation.

The President—I think you can prove that very easily. Take this same honey you have heated, and stir it up, pour it out into a vessel, and it will granulate very quickly without the addition of any water.

The meeting adjourned to meet at 7:30 p. m.

FRIDAY EVENING SESSION.

November 30, 1917, 7:30 p. m.

Meeting called to order by President Miller.

The President—Mr. Dadant will discuss the Spacing of Frames.

Mr. Dadant—I do not like to read a paper; it does not seem to interest the public quite so much, but this paper contains quite a few measurements, so I have concluded to read it. Last year I went to the East, to New England, and attended nine different conventions, nine different bee-keepers' meetings. I addressed the bee-keepers of the convention on the "Prevention of Swarming". I think my son was at this meeting last fall and read my essay on this subject. In this essay I spoke of the Spacing of Frames as one of the preventatives of swarming, but I did not explain it as I propose to do this evening.

This matter has been taken up by Mr. Root in Gleanings; since I brought it out, it has been discussed in the "A B C and X Y Z" of Bee-keeping, but I see Mr. Root is not in the convention. At the Illinois State Bee-keepers' Convention at Springfield, where I read it, Mr. Root was present, and I told him I hoped when we met again he would have some argument against it. He has been going around to meetings, and I have not, but my paper has been read at Indiana, Ohio and Michigan, and I have been wondering whether he has found some arguments against the statements I have made. I wish he might have been here this evening to discuss it. These are questions that have been talked about very much.

Mr. Latham is a practical bee-keeper. He is professor in college at Norwich, Connecticut, and I was invited to visit his apiaries.

(Here follows copy of paper on Spacing of Frames—See page 62. this Report.)

Mr. Wheeler—What is your idea about the bees fanning the heat up into the second story? If you raise the cover say one-fourth of an inch, would that not be a good idea?

Mr. Dadant—Oh, yes, that helps; that is a good point but you have to be very careful because if a bad day comes you have to set the hive back. The beauty of the wide spacing is it gives more room between brood combs for the bees to cluster in the winter; more ventilation during the season. This matter of ventilation is very important. The more room we have for ventilation, the more successful are we going to be. I have known colonies of bees to sulk because the conditions were unbearable. It is very important to have plenty of room for ventilation.

Mr. Latham is a peculiar man but he has ideas and carries them through. He has some I do not like and some I feel very much pleased with. One of Mr. Latham's ideas is to put a few colonies in one spot, on account of robbing. He says: "I like to scatter them. If I work at them, and they begin to rob, I go to another apiary and they lose track of me." It was Mr. Latham who incidentally mentioned to me the principal advantage of wide spacing—Swarm Prevention—which had been overlooked by me, but it explained to me one of the reasons of our greater success in this direction.

Mr. Latham's system is simply a very large hive in which the bees have room for the whole summer or at least are supposed to.

Mr. Hassinger—What was the capacity?

Mr. Dadant—Capacity of three ten frame hives, may be more. I can hardly give you a satisfactory explanation of that because I did not pay very much attention to it; the thing that struck me was the spacing, which I thought was a good idea.

Mr. Roehrs—What Mr. Dadant states seems to me to be very reasonable, and if we change our ten frame hive to eight, or eight to seven, I think we come closer to nature because in nature we never see the bees if they have their own free will building even numbers. They always will have 3-5-7-9 if they have their own will.

Mr. Dadant—Do you mean they can count up to 9?

Mr. Roehrs—Well if they get a chance. Whenever you see a swarm, if they have their own free will, they will have uneven numbers; let them have their own free will as nature teaches them.

Mr. Dadant—You mean they start in the center and build on both sides, the center is the odd one?

Mr. Roehrs—No, that is not the point; they have uneven number of combs.

The President—Is it not a fact if the combs are spaced wider apart the bees

will cluster closer together and keep warmer in winter?

Mr. Dadant—That is my idea. I think more space between combs is a benefit. It gives a greater thickness of honey above them and the bees can winter better; that makes up for the objection which Mr. Hoffman found to it when he said we had too much space.

We agree with the comment of "A B C and X Y Z of Bee-keeping" that where wider spacing is adopted there is apt to be more honey stored in the combs, and less of worker, but more drone brood, but we disagree on the ultimate effect upon the bees. Where the cluster is located for winter we believe a thick comb of honey will make for better wintering although it may mean a little less honey in the sections. When drone combs are removed in early spring they should be replaced with worker combs.

The fact that we have used the 1½ inch spacing and have succeeded with it, seems to me to evidence that it is not injurious; the colonies are stronger and winter better; if they were weak, it would be a disadvantage.

When honey storing is in progress, the combs may be built two inches apart and even further. Dzierzon gave 1½ inches; Berlepsch said 1 3-8 inches apart. We adopted the Dzierzon spacing of 1½ inches.

The President—While we are waiting for these papers I might offer one or two suggestions. I have a bee-keeper friend who is very much in favor of metal spaced frames for the reason that they do not split off at the sides; the splitting off of the sides of the Hoffman frames can be prevented by driving a nail through edgewise of the frame; one from each side. A metal frame is of no advantage, it costs more, dulls the knife in uncapping and requires more labor in putting together.

The question of moth in the honey house troubles some of us; I think I have the problem solved. Years ago I used a great deal of carbon di-sulphide in killing moths in the honey house. Freezing will kill the moth. Have your honey house tight, and don't carry moths in in the spring; the combs from a dead colony in the spring are apt to contain eggs of the moth; if you carry that into the honey house, more moths will be bred.

Mr. Kannanberg—Where do you leave them?

The President—Put them on another hive; when the weather gets warm, use the combs from the dead colony for supering another hive.

Mr. Wheeler—I carry in spiders and they kill the moths. I make beds of spiders; the spiders kill the millers that lay the eggs.

Mr. Bull—With extracted combs, if you pile them up tight one above the other you will have no trouble. If you leave combs so that the moth will get into them they are going to get in, but if you close them tight over winter, you can leave them there until you get ready for them. I have known combs to be piled up a number of years, ten or twelve, and there were no signs of moth.

Mr. Wheeler—I believe pollen has a great deal to do with moths. I have extracted combs which I did not use, piled up where they stood last winter; I did not have any call for them, some hundreds or two of supers; I never think of keeping the moths out; let the frost kill them, and when I get ready I use them, whether it is this year, or next year; there are no moths hatched anywhere around my premises, and I do not allow them to breed or multiply and I have the luck not to have neighbors that do. I do not have that trouble unless I set away a comb with pollen in; the moths will get after that. I have extracted combs that have been standing there since a year ago last August; some of them open just as I took them out of the extractor and not a moth in them. What I took down this summer were free and are free yet.

Mr. Bull—You left them uncovered.

Mr. Wheele —Not purposely.

Mr. Bull—Do the mice ever bother them?

Mr. Wheeler—Not when I have not any honey in.

Mr. Kannanberg—Mr. Wheeler has got his spiders trained so they keep everything clear.

The President—Moths are not apt to bother combs unless there is pollen or cocoons where young bees have been raised. They will attack combs containing cocoons but if there have never been young bees raised in combs they will not be apt to attack them in this locality; in the South I presume it is much worse.

Mr. Bull—Did you ever have them get into comb foundation?

Mr. Dadant—I want to agree with the President about what he said at first but I cannot agree with him that unless there is pollen or young bees moth will not get in; I think moth will get into any combs.

Moths breed three times a year; the first time in June. There are only 400 eggs and one or two moths; the second breeding there are two or three hundred

times that many, and when you get to October, they will riddle everything. As our President says, they will die in the winter. You may have a house that is mouse proof and you will find mice in it; after a while you will find the hole. The moth comes in and you will wonder where it came in. You do not need to be afraid until about July. You take a hive where a colony died, there will be a few moths in it and you let those moths hatch and you will see them pretty thick; where the bees have died during the winter, render them up or give them to a small colony and there will be very few moths; but the President says the moth won't attack combs unless they have pollen in them; I have seen them eat the board.

The President—I think Mr. Dadant misunderstood me. My statement was they are not likely to attack.

Mr. Dadant—I think they are.

Mr. Stewart—Clean comb honey they do not bother.

Mr. Bruner—I had occasion to go through some combs yesterday that had been in stacks six or eight high, some of them not disturbed two years; the hive bodies that had combs with pollen in were riddled and others that did not have pollen in had not been touched.

Mr. Dadant—You did not have enough moths to go round.

The President—We have a question—What is the best way of rendering wax in small quantities?

Mr. Bull—Send it to Dadants; let them render it.

Mr. Dadant—To render combs; in the first place you want a kettle on purpose for that; it is worth while to have a wash boiler if you do not want to spend money for a Hershier press; they are expensive. If they are old combs, crush your combs.

They are brittle in cold weather. Crush your combs, put them in a sack and let them stand in water sometime, soaking them well; use soft water. I have seen people who never could render wax yellow because they used hard water; using soft water makes a great difference; put your wax in a sack, put it in a boiler; heat it; stir it well, and most of the wax will come to the top; that is the most simple way of rendering wax, but do not overboil your combs and do not use hard water. If you overboil your combs the steam gets between the particles of wax and makes it sort of mealy. It is simply water-damaged beeswax. We sometimes received beeswax from bee-keepers that looks like wax and yet looks mealy; that is done by overboiling; the only way to do is to melt it again.

Break your combs, melt them with soft water in a tin kettle; put them into a sack, stir well, skim off the top; melt it over once and you will have good wax; you can get rain water without difficulty if you have not soft water. If you want to get the very last of it you will have to press it, but you can take it out so that very few people would say there is any wax left in it. It is important to soak your wax in water *before* you render it. By the method I tell you, you will not need a press and this is the cheapest way of rendering a small quantity of wax. Take my word for it, you will have nice yellow wax and you will have about all that you can get out of it; you will get so nearly all, nobody will think it is worth bothering with after that.

Mr. Wheeler—Put a weight on it for a while but you will sooner or later have to take the weight off and stir it. You will get nice beeswax and wax is worth while.

Mr. Stewart—What kind of cloth do you use for the sack?

Mr. Dadant—It does not matter very much what cloth you use. You can use as thick as a flour sack, but I think it is better to use a fairly thick gunny cloth. If it is too open mesh it will not do. If you have any residues left, keep those for the next time and you will be able to use them. To get the wax out thoroughly we use a little press, an ancient cider press; the bottom and sides are steam pipe; the lid fits on that.

The President—I believe if one has twenty-five or more colonies it pays to have some sort of a press. The Hatch press is good.

Mr. Dadant—There is only one trouble with the Hershier press; its fixtures are not all tin; wherever there is iron, it colors the wax a little. The Hershier press puts combs in layers. The Hatch and other presses try to go too fast. If you take it slowly and give the wax time to rise you will succeed better. The matter of rendering wax is a matter of patience and care.

The President—If you take cheese cloth and put it inside your burlap the slum gum will not stick to it and the wax will be cleaner. The wax runs from the press into a pail and then it is poured off from the top into moulds.

Mr. Wheeler—I have been working along for years preparing wax for the market. I use lots of water. The wax comes on top. Take a piece of wire screen and dip off the top carefully and after a

while I put some more hot water underneath, and dip it again into another boiler of clear water and let it stand on the floor until it settles; I dip it when the settlings are at the bottom; in about three times I have about as nice clean wax as you can find.

Mr. Bull—I can get it clean by once melting; heat your wax good and hot, thoroughly melt and pour it into a can; I use a sixty pound can with the top cut out with a spout a little ways from the bottom; draw your wax into another can and blanket that can and you can keep that cake of wax hot for 48 hours and when you get through the dirt will all be at the bottom and your wax will be perfectly clean; you want to keep it quiet; don't touch it. In an ordinary sixty pound can a cake of wax will keep so hot you cannot hold it in your hand after you take your blankets off from it.

Mr. Wheeler—I find the Root press is a good thing for getting wax out of slum gum.

Mr. Stewart—Mr. Bull, did you ever mix any straw in your slum gum when you go to press it?

Mr. Bull—Don't need it.

Mr. Stewart—I do.

Mr. Dadant—I would like to say a word in regard to saving honey that is in the cappings. We get wax from people who do not like to render it themselves and you have no idea the amount of honey that is wasted in the cappings. Their wax is stickey with honey. Honey is valuable now. I think it is worth while for people to take care of it. I thought I would mention it because so many bee-keepers are careless about this. When we extract honey we use the capping can; we have two of those. One we run right along; sometimes at the end of the second day there is no honey in the cappings; we put those cappings in barrels; we take the top off and wash them with water; put your cappings in warm water and stir them and get the wax out.

We had one man ship us 1,800 pounds of cappings. We have large lots coming from different parts of the country. We found so much honey in one lot, that had we known it was honey he was shipping and not cappings, we would not have treated it as bees wax; it was probably half honey. I think it is a good point to make sure your cappings are clean of honey before you render it.

The President—The amount of honey left in the cappings depends upon the temperature of the atmosphere. In October there is more honey than wax even after it has stood and drained as much as it will. I wash the cappings but instead of making vinegar, as Mr. Dadant does, I use the washings to feed the bees; put it into sixty pound cans and feed it in the spring.

Mr. Dadant—It is useful and I do dislike to see honey wasted. The only trouble about feeding it to the bees is if there is any disease in that honey there is a chance of passing it through to the bees; when you ship cappings with honey in it the bees get to it and if there is any disease you are increasing your chances of trouble.

The President—It is a question with me whether it is profitable to make vinegar.

Mr. Dadant—You get fifteen or twenty cents a gallon wholesale for that vinegar. Vinegar making is very close to wine making. You have alcoholic fermentation; there must be enough sweet in your liquid to make alcoholic fermentation. With the washings of the cappings, we judge of it by putting an egg in it; the egg must come to the top and show the size of a dime at the top; do not expect it to stick up out the liquid, but if you can just see your egg floating it is strong enough, one and one-half pounds of honey to a gallon of vinegar. Vinegar is made by fermentation. The ferment in honey is very irregular and we prefer to kill that ferment and put in good ferment. Fermentation of flowers is of all kinds. We have seen germs that would spoil vinegar so we heat the honey to kill fermentation and then put in the proper germs of fermentation. Grape juice or apple juice is about right; the sweet juices of apples or grapes.

The alcoholic fermentation is first; you put in your ferment, grape or apple juice; 10 per cent proportion, less will do; a bucket full of grape juice or apple juice in a barrel will be ample, and keep it warm. Alcoholic fermentation will only take place at 70 degrees, better up to eighty or ninety degrees.

If you have cider made late in the fall, at this time, for instance, and leave it in a cold place, it will remain sweet cider until it has a chance to warm up.

Now when the alcoholic fermentation is over, you can start the acetic fermentation, by putting a little vinegar into it. This fermentation needs plenty of air, and if you want to stop it you will want to bung your barrel.

I am told that the vinegar makers who make wine and cider vinegar, in a hurry, make it in forty eight hours, by letting it drip through a barrel filled with chips;

when it comes out at the bottom, it is almost strong vinegar.

We let our barrel of vinegar 2-3 full, set in a warm place and in the course of two or three or four months it makes pretty good vinegar. The better care you take of it, the better vinegar it will b The making of good wines has been successful only by great care.

Mr. Wheeler—Do you use out door atmosphere?

Mr. Dadant—We keep it in some warm place in the house; a warm cellar is a good place.

The President—Have you tried yeast for the alcoholic fermentation?

Mr. Dadant—We generally have fruit juice; yeast is all right. In regard to fermentation of wine: When I was in France they told me they made any kind of wine by getting the bacteria from the wine that they preferred to have. They could imitate any kind of wine, by getting the bacteria and putting it in the mead.

Question—Why is it necessary to publish all bee-keepers' journals at the same time of the month?

The President—Mr. Dadant, will you answer that?

Mr. Dadant—Mr. President, that question was raised by Dr. Miller. Dr. Miller took up the matter with three bee journals. The trouble was, who would publish on the 15th of the month? Nobody wanted to. The idea is, to the man who doesn't know about it that it looks as though the bee Journal was behind the time, publishing on the 15th, and it would seem to throw a little slur on it if it is not published promptly on the first. Some man suggested this morning we should publish on the 15th of the previous month. I do not like to buy an automobile in 1918 of 1917 style; in 1918 I want to buy a 1918 automobile.

A Member—Why does any one want it published the 15th?

Mr. Dadant—The bee-keepers say, "We get all our bee-keeper Journals at once." There would be one advantage, if there is something new between the first and the fifteenth there would be more chance of getting it, they claim; I would like to have the ideas of the bee-keepers.

Mr. Kannenberg—I think it is a good thing to have them on the first; if one prints the same as the other we can easily see and look at that one and it would be all the same.

Mr. Dadant—Then you would know who was playing the second fiddle.

The President—Is there any demand among the bee-keepers present for a journal to be published on the 15th?

Mr. Wheeler—I put that question. The thought was never brought to my mind until this morning. The question was asked: "Why do you suppose it is we cannot have one journal the middle of the month?" I wanted to hear what Mr. Dadant had to say. There is one thing that struck me as favorable, that is, the time of honey flow, the season people were busy with bees, if we got a report the middle of the month, we would not have to wait a whole month, as to what the prospects were, what was going on.

Question—Which is the best, natural swarming or artificial swarming?

Mr. Bull—The main difference is, natural swarming takes seven days a a week while artificial takes only one.

The President—I know it would be a pretty difficult matter to handle bees in out yards if you let them swarm naturally, it might be all right if a man had few colonies, where he could watch them and did not have anything else to do.

Question—Does it pay to raise queens every year?

Mr. Bull—Mr. France claims that it does; his way of controlling swarming is to go through the colonies at the time of swarming season, kill all the queens that are there and let them re-queen, or give them a queen. He gave an address on this a year or two ago: "The Value of Young Queens, by N. E. France."

The President—There are queens and queens; queens that you buy and queens that you raise. If you breed from the best, use the strongest and most vigorous stock, your queens will last more than one year. If you buy your queens or raise them in a haphazard way, your queens will not last so long. Queens that are purchased are shipped a long distance in the mail and I think to some extent are injured. Queen breeders are not as careful as they should be in the selection of the best stock. They get hurried to fill orders and send out queens that probably would not be shipped if they were not hurried to ship orders.

Mr. Wheeler—What would you consider as essential in selecting queens to send if you were a queen breeder?

The President—Vigor of colony; color would have some weight; honey gathering qualities would probably be the strongest point.

A few years ago I purchased a superior queen from Mr. J. P. Moore of Kentucky and raised a number from that one and

the colonies headed by those queens reared from that one extra good queen gave almost double the surplus that the others in the yard did, raised from ordinary stock. We find pure bred cattle producing large quantities of beef and others nothing, and I think it is the same way with the bees. If you raise queens from good stock you will get something that will last more than one year.

Meeting adjourned to meet at 9:30 a. m. Saturday.

SATURDAY MORNING SESSION.

December 1, 1917, 9:45 a. m.

Meeting called to order by President Miller.

Mr. J. A. Warren—(The A. I. Root Company, Medina, Ohio.)—Mr. President, Gentlemen, I assure you that I come here this morning with a great deal of hesitancy, especially when I see Mr. Dadant and Professor Hine of Ohio. To explain why I am here, Mr. Ernest Root was to have been here and the fact that I am to attempt to take his place is another reason why I sould hesitate to come before you, because Mr. Root is one of the men the bee-keepers are always glad to hear. I don't know whether I shall take the same topic he was to have discussed or not. I didn't know that I was to come until rather late yesterday. In order to get away, I had to stay at my desk for more than an hour overtime and left just in time to get the train so I haven't had a chance to give very very much thought to the subject. I would much rather have prepared a paper, or at least have gone over my subject because sometimes one is apt to take a good deal of time to say the few things one wants to say unless he has notes before him.

Mr. Root said he had expected to talk to you on the present and future of bee-keeping. Of course, present conditions are reflected in the market conditions. I believe, as I have told many bee-keepers, the bee-keeping industry is just in its infancy. It is just beginning to grow, and those who have investigated the development of the bee industry in the last few years couldn't help but be impressed with the strides in development that have taken place, especially in the last ten years, but I look for greater development in the coming years than possibly we could dream of.

The present conditions are that honey is the highest price that perhaps we have ever known it to be, at least in my experience. We are under abnormal conditions, unusual conditions. You perhaps know better than myself what we can expect in the future, as to how the present conditions will affect us. As I think of it now, many years ago the situation was simply this: That those who did produce honey in excess of their own market had a good deal of difficulty in disposing of it and the extent to which a man could engage in the bee business profitably depended very largely on the outlet he could get in his own local market.

You might be interested to know my first experience in the honey business. It was many years ago. Mr. A. I. Root would come to me and say that this man or that man wanted some bee hives and that he was short of cash but had honey. Do you suppose we could get rid of that honey? The result was that the bee hives were shipped to him and we did our best in getting rid of his honey, giving him all the returns received for it. Those instances became more frequent. Very soon it became a burden, that is, there were more people applied to have us help them to dispose of their surplus honey than we could take care of. We did our best, but couldn't anywhere near begin to take care of the honey that people wanted us to sell.

It seems strange, now, to think that at that time we couldn't begin to handle the very choice white clover honey that would be offered to us at five and six cents a pound. We couldn't begin to handle it. That may seem strange to you and the man that says the price of honey hasn't advanced, I think perhaps is a man who may have forgotten those conditions, or was in a different situation so that he had a local market that would take care of his production.

If the bee-keeper is to be as successful as he should, there must be a demand for his product, and that is what we are all interested in. That is what you bee-keepers have been doing, creating the demand, and I think the demand that the bee-keeper has created in his own home market has gone a long ways in making the conditions more stable, but the bee-keeper as a rule is able to reach only a small part of the market. The great centers of population are large cities. The bee-keeper wasn't able to reach this market only in a very small way and it was this condition that brought into the market the commission man and other who handled honey more as an accomodation.

We hear a good deal of complaint against the middleman. In fact, to-day I think if someone wants to attract attention to himself and perhaps become popular with

many people, whether it is the honey line or anything else, he gets up and swings both arms using all his lung power shouting against the middleman telling people he is an evil and that he is making all the profits and getting all there is in the business. We will have to admit that our present system of distribution is expensive, but if anyone can come forward to-day and give us a plan that is better than the one that exists, that can show us how we can get along without the middleman, he is a very wise business man because the distribution to-day is a very wide problem.

To make conditions stable, there must be a continuous and steady demand. The law of supply and demand still regulates the price to a great extent and in that connection we have one cause to-day that we have never had before, and this is, that honey has been going into markets that we have never been able to reach before. There is a demand for honey that never before existed, and probably will not exist again. I think that is something that we need to take into consideration, not to believe that these conditions are bound to last. We are all glad that conditions are as favorable as they are to-day.

There is also the tendency on the part of many bee-keepers, and not only bee-keepers, but men along all agricultural lines who have any commodity to sell, to feel that he man who bought their commodity when the market was lower knew what the market would do, and did it to make an abnormal profit on his goods. In very few instances do I think such would be the case and I believe perhaps you gentlemen will all agree with me, but that doesn't change the situation.

Now, if we look at the situation as it was just about five years ago; go into the cities and you would not find honey being distributed very generally, you found an indiscriminate lot of various brands of honey all over the country, and my first experience in selling honey was an effort to handle honey from the localities where there was a surplus and that we might sell in the markets where there were concerns bottling and distributing among the local trade. We found the concerns who were engaged in that business most extensively were the wholesale grocers. When jams and jellies first began to be manufactured the wholesale grocers gradually added a food or manufacturing department to their business. The factories would manufacture these jams and jellies and ship in barrels because of the trouble with glass containers and the difficulty in shipping small packages which was much greater, years ago, than it is now. The risk was greater. The factory would ship their barrel lots to the wholesale grocer and the grocer would have a little back room where a few girls were working, packing jams and jellies in the various sized jars that he wanted distributed under his own brand. Gradually from this sprung up the wholesale grocer's private label goods. You may differ with me on this, but I believe very little in a private label brand of goods for the wholesale grocer. Some of them are so large that they would really be classed as manufacturers, as Sprague-Warner, Liggett, and R. C. Williams, who are very large packers, but the original plan was that they might buy a line of goods that they could pack themselves and consequently show them a larger profit, and every package bearing their name on the retail grocers' shelves was so much more advertising for them. Even the retail grocer got into the habit, having certain lines of goods bearing his own label, among them honey.

My experience was this, and if you have been interested along the same line, perhaps you have had a similar experience; in going to some of those men, even some of your largest men in Chicago, it was impossible to sell those men a high grade of honey. Before transportation facilities and other conditions were such that honey was shipped from all parts of our country to all the big markets, they only bought the honey which was local and suited the people in that locality, but when the southern and western honeys came in, that is, the amber grades, they bought those goods with practically no knowledge of quality. Perhaps they had a less knowledge of those goods than of any line they handled, consequently, they bought the cheapest. In going to those men, the first question they would ask was "Is it pure?" The next question would be in regard to the price. Perhaps you have had this experience yourself. The result was they bought the cheaper goods which you know were absolutely pure but probably inferior in flavor. These goods would go out, and a housewife buying honey of a certain brand, then later buying another package bearing the same label but containing honey of an entirely different flavor, was very apt to decide that the honey in one of the packages must be adulterated, not understanding why pure honeys might be so different in both color and flavor. It was hard for the wholesale grocer buyer to understand that purity of honey means absolutely nothing in regard to quality of flavor. Such were the conditions. It was

impossible to sell the better grades, and you couldn't wonder that the jobber in the city wasn't very much interested in honey for his sales were small. If you were to call to sell him honey, we would open his book to the sales record. Now, a firm that is doing a very large business, a million-dollar-a-year business, perhaps it would not be at all surprising if you found they were not selling over two to five hundred dollars worth of honey a year. Compared with their volume of business, that amount was very small, and you can appreciate a little better the task that is before the man who is going to get them interested in pushing honey.

Perhaps I am getting a little ahead of my subject. When we first sold honey, it was just producer to the consumer, but the distribution that you could get that way was so very limited. If honey is to have a large distribution we must be able to send it through the regular channels of trade. Now, the sales organization includes the wholesale grocer. In every locality he has experienced salesmen, men of high selling ability who are employed at a high salary. The firm who has only one commodity to sell cannot afford to employ salesmen to cover the trade and call on the retail grocer to place their goods on his shelves, so they must employ the regular organization. The wholesale grocer instead of having one line, has many lines to sell. When he discovered that his sales were not over two hundred and fifty, five hundred, or perhaps a thousand dollars a year, on any one commodity, the buyer was not going to spend very much time in selling that article, just enough so that if they did have a call they could supply it. So far as their salesman ever mentioning it to his customers the fact that they had honey, that never occurred to them. If Mr. Jones asked for honey they said, "Oh yes, we have it." "What is it?" "It is good, our own brand, and you know we always handle the best." That was the situation until a very short time ago. Then the big task was to make the wholesale grocer realize that there were possibilities in the development of the business that would be worthy of his attention and of his telling his men to give some special attention to that particular line.

To do that, there must be a reasonable profit. The profit is not large, but it must be such that it will be attractive to him if he can get the volume of business. You must prove to him that there is a chance to get that volume, if he will set his force to work at it. That has to be done by concrete facts, not by just talk. Then he has also been discouraged along that line by another thing. I hope you will not feel that I am criticising the way of selling, but when the wholesale grocer's salesman walks into a grocery store, he goes in there to sell honey and the customer says, "Oh, well, I am buying my honey down there from Mr. Jones." That is all right, but that salesman discovers that this retail dealer is buying honey at perhaps, ten, fifteen, or twenty cents a dozen cheaper than this wholesale grocer can sell it to him, the wholesale grocer's salesman goes back with a poor report to the buyer, and the buyer at the end of the season decides that it is poor business. He decides, "We won't sell honey." "We will sell dried fruit, peas, canned tomatoes and corn and all those things."

What is needed is a campaign of educating the public to first attract their attention to the honey. Get them to ask for it, and that is what the bee-keeper has been doing. He has been helping that condition. Then we would back that up with an educational campaign to the wholesale grocer and to his salesmen, and you know without my telling you, perhaps, what the result has been, as do all who have been interested in the welfare of honey; so that we have to-day, or had before these unusual conditions came up, perhaps the most stable conditions that the honey market has ever known, and yet it is not as stable as we want it to be.

Now, as I look at it, the thing that is going to make conditions stable is a conference between the producer and the seller, and recognition on the part of the producer of the real expense connected with selling the article. The producer has two questions before him: He has to decide which is the best way for him to dispose of his honey, either in the home or in the foreign market, he wants to ask himself, "Well, how am I going to sell it?" If he is interested not only in his own success but in the success of the business in general, he thinks of this, because if he is one of those who sells very carelessly and is willing to send his honey out on almost any kind of an arrangement, without any investment whatever on the part of the buyer, then if the market is a little weak, that honey is going to be sold on a weak market which makes it still weaker. The problem resolves itself into this, that it is up to the bee-keeper to decide whether he wants to be a big producer and a salesman, because it takes ability to sell goods. It takes time to sell goods, and I have noticed this everywhere, there are more bee-keepers

who are deciding on the big producing end and feel that the sales should belong to the regularly organized channels of trade that will give it their energy and time and push the line, leaving the producer to produce in a larger way if he is in a territory or locality where he can do that, and there are many people going into the business that way.

Perhaps the criticism heard most often is that in the price at which the honey is retailed from the retail grocer, and the price which the producer receives, there is too great a difference. It does look like a large difference, but costs have been mounting every year, and when you realize this, that there are advertising costs added to our sales costs, there is first the broker, there is the wholesale grocer, there is the retail grocer, there are the freights from the producing locality to the packing plant and freight from the place where goods are packed to the wholesale grocer, and all these must be taken from the price paid the producer and the price which is paid by the consumer, and if you give those careful analysis and are willing to sit down and figure it out for yourself, you will discover that the other man is not getting perhaps a larger profit than he should get.

I think this is one thing that you people recognize along other lines, or all producers do along other lines. They have had to recognize the fact that we must learn to think and be willing to pay the cost of modern distribution. When someone can come and show us a system of distribution that is more economical than the one we are using, then we are all, I think, every one, ready and only too glad to have that system.

You may not have thought of this, but I believe it looks as though there was one danger ahead of us for next year. Now, I presume that there are many bee-keepers who felt that they have sold their honey this year, perhaps too early, and that they would have made more money if they had sold it later. I do not know if that is true, because as an article becomes scarce of course the price naturally advances. That is the simple law of supply and demand. But the danger next year is, I believe, that a good many—now, I admit I might do the same thing myself—will say to themselves, "I am not going to be in a hurry to sell my honey next year."

The last few years the people have been encouraged to use honey that have never used it before, people in cities that are not able to have homes, that have just commenced to use honey. They are using it in a small way. Many of them are discontinuing the use of honey that have just started. They haven't used enough to get the habit but they are going to discontinue now because the price is high, and they feel that all they can do is to buy bread and potatoes and just the barest necessities of life. They do not look upon honey as a necessity, it is in the luxury class. After those people get in the habit of using a substitute, it is going to be harder to win them back to the use of honey when so many find it a strenuous effort to make both ends meet; and it is going to take more effort on the part of the bee-keepers and everyone else to get them back when times become normal again. Next year many will say, "I am not going to sell so early." Remember this, that September and October, I believe, are the two biggest months in the year for selling honey. If honey which should be consumed during the months of September and October next year is not consumed, that quantity is not going to be consumed during the balance of the year. There is no amount of figuring that will convince me it will be otherwise. This is merely my personal opinion but I think these are all things we need to think of, that there is such a thing as holding the market back too long.

I believe that another thing that is needed to make a stable market is confidence between the seller and the buyer. You all know that there are some localities where it is almost impossible to get an accurate statement of the production. I was interested in the information brought out at the Wholesale Grocers' Association at Philadelphia, which is made up of the largest wholesale grocers throughout the East. In the meeting the following situation was disclosed: In handling many California fruits last year, these eastern buyers were disappointed. They placed their orders, then the report came in, "We can't get the goods," and the contracts were only partly filled. But later on those goods were shipped at a higher price. They couldn't get accurate reports, and it is a common joke in the East that every car you buy in California is the last car, whether dried fruit, prunes, oranges, raisins, or whatever it may be. They apparently believed that by not letting the actual producing conditions be known, they would get a higher price. It may have served them in some individual cases, but if this movement, which I know is under way throughout the East develops, it is going to react to their detriment, because they have lost the confidence which they should have of the eastern

buyer. Now, I believe that it is necessary for the man who is going to handle your commodity to know exactly what the production is. I heard a man express himself the other day, "I will never tell anyone again how much honey I have got." That might help him perhaps at the time, but is that the thing that is going to establish confidence, that makes it justifiable for the man who has got to invest his money in and hold those goods? Is it going to justify him to invest at the highest price in your product? We must have a degree of confidence, and I think the producers and the buyers as a whole are worthy of that confidence.

To sum up the whole situation, it means cooperation. That is an overworked term. It is something that you get tired of hearing. Everyone is talking about cooperation. I heard a story the other day that illustrates the point pretty well.

There was a young married couple, and they were very happy, as is the way of most young married couples, they couldn't bear to be out of each other's sight. Mary would hardly let John go to the office to take care of his regular business and things went on in this way for some time. Mary would be waiting on the porch when John came home. Finally, John had to take an automobile trip out in the country for some reason or other. He telephoned Mary that he might be a little late to dinner. She got dinner ready and waited. He didn't come. He had gone out in the country, and as sometimes happens, had some automobile trouble. His machine broke down in a rather deserted part of the country. He couldn't get to a telephone or anyone to help him out, he couldn't fix his machine and he was a long ways from town. So he decided that the only thing he could do was to walk back. In the meantime Mary, waiting supper, was getting more and more anxious. She was sure something serious had happened to John and didn't know what to do. Finally, a bright idea struck her. She decided she would telegraph to all of John's friends and find out if they knew anything about him, so she sent a telegram to each one she could think of, then waited, becoming more anxious all the time. Finally, pretty late in the evening John came walking up the front walk and explained his absence. He had only been home a short time when in came a messenger boy with a bunch of messages in his hand. "What does this mean?" said John, and Mary replied, "John, I was so anxious about you that I just telegraphed to your friends to find out if they knew where you were." John says, "We will see what they have to say about it." He opened the telegrams and they all read alike, "Don't worry. John is spending the night with me."

(Laughter and applause.)

The President—I am sure we have all enjoyed this talk. I agree with the gentleman that the tendency is towards specialization in the honey business as in practically every other industry. One thing we must look out for, and that is, not to get too many men between the producer and consumer that want profit. We are not grumbling about paying a fair profit to the man that does the work, but we don't want too many fellows in the game. We have a couple of questions in the question box to dispose of. What is the advantage of housing an apiary, is the first one. Will anyone tell us that? Mr. Stewart, have you a house apiary?

Mr. Stewart—Yes

The President—We would like to have you tell us about it.

Mr. Stewart—What are the advantages?

The President—Yes, sir.

Mr. Stewart—Well, sir, what are the disadvantages?

The President—Well, if you will answer our question we will try to answer your question.

Mr. Stewart—Tell me what are the disadvantages. The advantages are such that if mine should burn down tonight before I would get home, I would get another one, and if a man would work in one for six months, he would stop a whole lot of swearing. When I work in my yard, every time there I swear.

The President—One advantage then is to keep us from swearing (laughter). Anything else? I understand that in European countries there are more house apiaries than are found in this country. One of the advantages is that you can work in the shade. Another is that the bees need not be removed for wintering. They fly out, it requires no special preparation in the fall for wintering and there is no unpacking required. I never used one of them myself and could not speak from experience.

Mr. Wheeler—One advantage would be keeping thieves out.

The Secretary—I think if they wanted the honey bad enough, they would go through a building just as quick as they would through a hive.

The President—In my bee-keeping experience for the last fifteen or sixteen years, I have only had one hive stolen. I have had some other hives disturbed. One

time there were a couple of Chicago boys out there. Of course, Chicago boys are very smart boys. They put a stick into the front of the hive and wiggled it around to see what the bees would do. Well, the bees did something (laughter).

(A short recess was taken.)

The President—The meeting will please come to order. We have with us Professor Hine, of the Ohio University. We would be glad to have a few remarks from him, after which we will take up the business affairs, the election of officers, etc.

Professor J. S. Hine—Mr. Chairman, Members of the Chicago-Northwestern Bee-keepers Association, I dropped in at this meeting rather unexpectedly, I therefore didn't prepare any paper at all, but your president asked me to say a few things in regard to conditions in our state, and I didn't like to refuse him.

We have the same problems, of course, to combat in our state, that you have in this State or any other state where honey production is taken into consideration. We are organized up there in the state of Ohio something like they are in some of the other states, that is, the State Board of Agriculture has an inspector employed. This inspector is both the anthological as well as the apiculture inspector, that is, he has to do with the anthological questions of state so far as they pertain to what you might call police work. He has the police power, if there is any trouble along the line of inspection; if anybody doesn't see fit to do what he ought to do and what neighboring bee-keepers think he should do, they can go to the chief inspector for relief.

Of course, the University with which I am connected don't have anything to do with the inspection work, any more than in an educational way. Our state does not appropriate a very large amount of money for inspection work, and its inspectors have been able to visit only those apiaries that made application, consequently there is a growing desire on the part of apiarists to have more inspection work done.

Foul brood has scattered all over the state to quite an extent. Some of our bee-keepers having twenty-five colonies or more, have foul brood in their apiaries, and haven't been very successful in getting rid of it, because they have some neighbors, possibly, who are more or less indifferent. Now that situation, it seems to me must be controlled if those who want relief really get relief. How to do that is one of the problems which we have before us at the present time. I don't know how much of a problem it may be in this or in some other states, but it is a pretty big problem in our state, and the possibility of accomplishing that may be, I take it, brought about in different ways. One way is through the inspection service and another is through education, extension work. Now, I do not know just what the bee-keepers may be thinking about extension work, but surely along the line of foul brood it seems to me education may amount to quite a good deal.

We have had a great many complaints about foul brood all over the state. We have had a great many complaints and a great deal of damage has been done, but I believe that with the matter as it now stands, Ohio is going to be able to accomplish something along this line. We are offering at the State University, besides what you might call Extension Work, some other courses, and we are trying to build up the best course that we can, trying to make it practical. Ohio has a considerable number of quite large apple orchards scattered through the state. We find the owners are taking a good deal of interest in bee-keeping at the present time, and some of them if not all of them are making very good bee-keepers.

The President—Our time is somewhat limited, if we do not have an afternoon session, and we will have to push this along rapidly. I believe the first thing in order will be the election of officers. Who will you have for your president for the coming year? Nominations are in order.

Mr. Wheeler—I nominate Mr. Miller.

Mr. Stewart—I second the nomination.

The President—I would rather you put somebody else in the place.

Mr. Stewart—It don't make any difference what you want.

Mr. Kanneberg—Mr. President, under the rules, as there is only one nominee, I make a motion that the Secretary cast a ballot for President for the ensuing year, for Brother Miller.

Mr. Stewart—(And others)—I second the motion.

Mr. Kanneberg—The Secretary will put that motion.

The Secretary—It has been moved and seconded that E. S. Miller be our President for the coming year. All in favor say aye. (The motion was unanimously carried.)

I cast the ballot for Mr. Miller (great applause).

(Cries for "speech" were heard.)

The President—I think I have made so many speeches here that you will be getting tired of them. I certainly appreciate your

good will in regard to the matter, and hope that I will be able to serve you.

The next in order will be the election of a Vice President. Who will you have for your Vice President for the coming year?

Mr. Stewart—The same man we had this year.

The President—Mr. Hassinger is nominated.

Mr. Wheeler—I second that.

The President—Any other nominations? (None were offered.) Those in favor of Mr. Hassinger acting as Vice President signify it by saying aye, opposed no. The motion is carried unanimously. Mr. Hassinger will be the next Vice President.

Now, the Secretary. Who will you have for secretary?

Mr. Stewart—Mr. John C. Bull.

Mr. Wheeler—Second the nomination.

The President—Mr. Bull is nominated for Secretary for the coming year. Any other nominations? (There were none.) Those in favor. (The motion was put and unanimously carried.) Mr. Bull will act as Secretary.

Perhaps before we go further we better have the report of the Resolutions Committee in regard to the matter of whether or not we continue our price committee for the coming year. We will hear from the Resolutions Committee next. Mr. Hassinger is the Chairman.

Mr. Hassinger—There are some of these resolutions that have not been discussed, and I think it would be wise to take these up in rotation and give a chance for discussion for each resolution in turn, that is at least some of them.

"Whereas, The management of the Great Northern Hotel has donated a room for the use of the Chicago-Northwestern Bee-keepers' Association,

"Resolved, That we tender our thanks to the management of the Great Northern Hotel in appreciation of the courteous treatment, for the use of a free room for our convention purposes.

"Resolved, That our Secretary be instructed to forward a copy of this resolution to the management of the Great Northern Hotel." (Adopted.)

Mr. Hassinger—(Reading.)

"Whereas, The interests of the Chicago-Northwestern Bee-keepers' Association and the interests of the Illinois State Association are mutual, be it

"Resolved, That we as a body ask the support of Legislature in providing an appropriation for the erection of a special Bee and Honey Building on the State Fair Grounds, for exhibition purposes;

"Whereas, We have been helped by the State Association in the publication of our reports, and also in the expenses of conducting the Association, be it

"Resolved, That we request the State Association to continue and increase their help in the publication of information to bee-keepers, concerning the value and selling prices of honey." (Motion carried.)

"Whereas, The Committee of the 1916 Convention of this Association appointed for the purpose of investigating the prices of honey and recommending to producers a schedule of minimum prices for the season of 1917, has to the satisfaction of this Association performed its work, resulting in more fair and more uniform prices to the producers, be it therefore

"Resolved, That the work of the Committee be continued throughout the season 1918 and extended in so far as the funds of the Association will permit, and that the president be instructed to appoint such Committee.

"Resolved, Further, That the Treasurer of this Association shall be Chairman of the Committee on prices, and shall receive as compensation for his services in securing members and in preparing and distributing the recommendations of the Committee and other necessary literature, twenty-five per cent (25—) of the fees derived from membership."

The President—What shall be done with the resolution?

Mr. Dadant—I move its adoption, Mr. President.

(The motion was seconded by a member.)

The President—It is moved and seconded that the resolution be adopted. This is open for discussion. If anyone has any objection to it, we would like to hear from him. I think this is an important resolution and should be considered carefully by the Association.

Mr. Stewart—If they can't do us any good they can't do us any harm so let them crack ahead.

The President—This, you will notice, gives the Secretary 25 per cent of the fees of members; this 25 per cent is to pay for the work. It has been said that bees work for nothing and board themselves. I don't know that our Secretary would be willing to do that.

Mr. Hassinger—I would like to say a few words in regard to that. I think the time is past when we get something for nothing.

Mr. Stewart—That is good for anything.

Mr. Hassinger—I think any man who does any work should be paid for his work,

making it an object to do something. There is nobody that can afford to do something for nothing.

(Upon motion the resolution was adopted unanimously.)

The following were appointed as Committee on Prices for the season 1918.

John C. Bull, Valparaiso, Indiana.

E. D. Towns nd, Northstar, Michigan.

L. C. Dadant, Hamilton, Illinois.

Edward Hassinger, Jr., Greenville, Wisconsin.

Mr. Hassinger—(Continuing reading):

"Whereas, Our Government is taking care of the extension work in bee-keeping, and

"Whereas, It is necessary to educate the future generations on honey and its food value, and

"Whereas, The United Honey Producers have published a bulletin that is intended to teach the value of honey as a food to the future generations through the Domestic Science Department of the public schools.

"Resolved, That the Chicago Northwestern Bee-keepers' Association indorse the use and distribution of such Bulletins to meet the possible increased production of the future."

(The motion was put by the Chair, and carried.)

Mr. Hassinger—

"Resolved, That in the death of W. M. Whitney, of Evanston, Illinois, in the past year, this Association has lost one of its oldest and most esteemed members.

"Resolved, That a copy of this resolution be sent to the members of his family."

Signed by the Committee:

EDWARD HASSINGER, JR., *Chairman.*

W. H. STEWART.

J. C. WHEELER.

(Motion adopted.)

Mr. Flood—Mr. President, it seems to me that the Resolutions Committee should take notice of the field meet that was held at Valparaiso, Indiana, last summer, and give some thanks to the secretary and the president for the efforts they evidently made and the success which it was.

The President—I would say that as far as the thanks are concerned, I think we can dispense with those, but here is a more important question, that is in regard to having a Field Meet next year. Shall we have one?

A motion was adopted providing for a Field Meet, the time and place to be determined by the officers of the Association.

A motion was made and carried directing the Secretary to edit and revise the stenographic report of the proceedings of the Convention.

Concerning place of holding the Field Meet, invitations we e received from Mr. W. B. Blume of Norwood Park, Chicago, and Mr. Aaron Coppin of Wenona, Illinois.

The President—Miss Coppin has promised us a selection, a reading, I believe, and we will be very glad to hear from her now.

(Miss Coppin came forward and gave a reading; great applause.)

Have we anything else to bring up before adjournment?

A Member—I asked you a question about labels.

The President—The question has been asked how to make labels stick to tin.

The Secretary—I can answer that question.

The Secretary—These people sell paste that will stick, they sell it by the gallon, a dollar a gallon. If you want the address take it down, here it is: Patek Brothers, Milwaukee, Wisconsin.

Mr. Coppin—Mr. President, you have a label that laps right around the can. For tin, I add a little thin honey, and if you do that you will have no trouble in getting the label to stick to the tin.

Mr. Dadant—Mr. Chairman, we never have trouble to make our labels stick to tin. We make a flour paste that holds, and I used to wonder why so many people had trouble. I found out that when a man uses very thick labels, strong papers, he has more trouble than where the paper is thin. So get your labels of thin paper. You can use home-made flour paste, and it will cost you next to nothing. You all know how to make flour paste. Mix your flour slowly with water. Mix it well, so there will not be any grains in it. Then heat it and stir it until it is the proper thickness, and your paste is made. If your labels are thin, they will stick to tin, but if they are thick they seem to shrink, and when they shrink they draw the paper off the tin. The idea of making the label go around and reach over is very good, because they have to tear it to get it off, but a thin label will stick where a thick one will not.

The President—At first, I had considerable trouble in making a paste that would stick, but I finally learned how. At first I cleaned the surface, rubbing it over with some washing powder—Old Dutch Cleanser, or anything of that sort. Later on I

learned how to do without that extra work. Don't make the paste too thick. I usually make about a half a pint or a pint at a time, but it must be cooked a long time in order to break the cells of the starch. Before it is done cooking, put in a table spoonful of honey, not necessarily thin honey, any honey will do. If you put in this much in a pint of this paste, you will have no trouble making it stick, whether it goes clear around the pail or not.

A Member—Flour paste?

The President—Flour paste or starch. It will work all right if you put in some honey and cook it long enough, of course not so it will burn. Cook it about thirty minutes.

The Secretary—The advantage of this other paste is that you don't have to bother to make it.

Mr. Dadant—If you make paste and don't use all of it the same day, put on a few labels at a time, put a little alum powder in before you make the paste and it will keep it from souring. Your paste will remain fresh for weeks or months.

A Member—Does it take much?

Mr. Dadant—No, probably a teaspoonful to a gallon would be sufficient.

A Member—It is often considerable help to put in a little vinegar.

A Member—A little concentrated lye will give the same result as the alum.

Mr. Moe—Mr. President, I do not wish to keep you waiting, but I would like to ask the professor from the Ohio University in regard to a theme that has been bothering us in our state. He suggested a combination of fruit growers and bee-keepers. In our state, somehow or other the combination never worked very successfully. The bee-keepers complained that the fruit growers were killing their bees by spraying, and that the honey was being poisoned during fruit bloom by spraying. I think we gain here much knowledge that we might dissemminate through our neighborhood in certain localities, and sometimes a little thing like that will save no end of ill feeling.

Professor Hine—So far as harmonizing the spraying that is complained of, to keep the fruit growers from sprayin when trees are blooming, I think that is probably a thing that may trouble a little now, but I believe that is soon going to remedy itself; that is, the fruit growers are recognizing now that they can't very well get along without bees, and it seems to me an educational matter simply to inform them in some way that they are really injuring themselves as much as they are injuring the bee-keeper, by spraying when the trees are in bloom. That is, they are killing the very agents which are fertilizing their blossoms and therefore injuring themselves. I think that is being talked at all the bee-keepers' conventions, and as I see it, a great deal of good can be done by simply keeping talking about that and telling those fruit growers that bees are fertilizing their blossoms, and have them get some bees, if you can't do anything else, and go into the bee business.

A fruit grower, as I said, is almost always an enlightened fellow and he makes a good bee-keeper. You can get him interested in the bees, and when he gets interested in bees he surely won't spray any more to kill them; he knows there is some good to come from them. I believe it is an educational matter, and can be gotten at very easily.

Mr. Dadant—Mr. President, I have had a little experience in speaking to a mers. I have been employed three or four times to speak at Farmers' Institutes, and I have found that the most important thing that we could say as bee-keepers to the farmers was not how to keep bees, but the benefit of bees to agriculture and horticulture. I find that a great many orchard owners are still uninformed as to the possibility of bees damaging blossoming fruit. I believe it would have been a good plan to have passed a resolution urging the farmers to employ bee-keepers to lecture to the agriculturalists throughout the country, in order to inform them of the benefit and harmlessness of bees to orchards.

Mr. Hine—We are going to have a farmers' week in the Ohio State University in a few weeks. It comes between semesters, about the first of February, and one of the efforts which we are making, is to have a bee-keepers' day in that farmers' week, or have a day where we get in some speakers that speak along practical lines. That is one of the lines which we are going to push. We want to make this bee-keepers' day and farmers' week a permanent thing. We get several thousands of farmers and fruit growers engaged in various kinds of agricultural pursuits, to come in and spend a week at the University, and it makes it a general movement along agricultural lines, in anything that pertains to agriculture, that will bring out the farmers to talk things over.

Of course, it is pretty hard to get them all talked over in the same line, but as these things come up and are called to our attention, speakers are employed to talk along those particular lines.

Mr. Moe—So far as Wisconsin is concerned, we have had considerable trouble. We tried to get a law through the state legislature, forbidding spraying during fruit bloom, from the bee-keepers' standpoint, but it was defeated by the fruit growers. We had a farmers' institute and a rather interesting clash occurred between myself and a fruit man who was sent there. He didn't like it because I had the bee-keeping authorities back of me. I wasn't sure that the spray did poison the pistils and directly injure the fruit bloom, even if it didn't injure the bees. I may have gone a little too far on that, I am not sure, perhaps the gentleman can correct me if I have. But the fruit growers wouldn't listen to the law that the bee-keepers wanted passed for their benefit and for ours. You know well enough the condition of a lot of farmers, they simply don't care, whenever they get ready they will spray in season or out of season. The result is they do a lot of spraying that is evidently doing a lot of injury to the bee-keepers. That is the point. I thought perhaps the Ohio gentleman would have some valuable suggestions for us.

Professor Hine—Well, I don't believe I have any suggestion that will solve that point at once, but it seems to me that if we work along the lines I have suggested, that we will get somewhere after awhile. It is pretty hard to get everybody into your way of thinking. It takes time for these ideas to get through some people's heads, and consequently you have got to give them time, but it seems to me that something can be done at the experiment stations. The experiment station people are interested enough to give advice, as they do in most all matters. The experiment stations, if they could be led to take steps, for instance, the subject might well be investigated. I realize that I do not know, possibly, quite enough about this. We do not know, for instance, just when the bees do quit working or gathering honey from blossoms. The consensus of opinion is usually that when blossoms first come out or soon afterwards while they are fresh, they yield a nectar, and that as the blossoms get old the bloom sort of loses that ability, and just what time we can begin spraying, I don't believe that point has been worked out very fully.

Of course, the only reason for spraying early, is that in the case of the man that has a big orchard he knows he has to spray and he consequently gets at it as early as possible, so he will have time to get it all done before it is too late. You know well enough that the codling moth for which he is spraying at that season must be reached before it gets into the fruit. If you do not reach it before it gets into the fruit, you won't get any results, that is, the insect is beyond reach and cannot be reached by the spraying method, consequently there is a rather short time in there between the time of the petals falling and the codling moth appears or the eggs hatch on the leaves or branches, wherever the eggs are laid. The insect crawls about until it finds the apple, then enters the apple. The idea is to have the apple well poisoned so that the young insect will get a dose of poison when it eats through the skin or when it begins to feed.

Now, the fruit growers know that, and they do their best to have their spraying all done in time. If you have a very large orchard and don't have very many spraying machines, and you have some bad weather mixed in, of course the whole work may not be accomplished. It seems to me that the only way we can get at this is along the line of education. It is pretty hard to tell the fellow that he shan't spray, and I suppose passing a law goes against the grain of some people. It may be a little hard, but this matter is being talked over at all the bee conventions and is a subject that is not altogether satisfactorily settled, but it seems to me that someing can be done.

The convention adjourned to meet at the call of the executive committee.

List of Members of the Illinois State Bee-Keepers' Association (Alphabetical) for 1918.

	No. of Colonies, 1917.	Pounds Comb Honey.	Pounds Extracted Honey.
Aiken, H. L., Waggoner, Ill	.....	.....	.....
Akines, J. L., Girard, Ill	23	2,000	.....
Albright, W. E., R. 3, Springfield, Ill	10	700	.....
Allspach, Elmer, Mt. Pulaski, Ill	.....	.....	.....
Ambrose, Valentine, Wenona, Ill	.....	.....	.....
American Can Co., 104 S. Michigan Ave., Chicago	.....	.....	.....
Anderson, H. J., Chandlerville, Ill	12	300	.....
Anderson, Oscar, Pawnee, Ill	5	24	300
Anthony, A. B., R. 5, Sterling, Ill	80	1,100	500
Arrowsmith, Mrs. H. P., Gibson City, Ill	.....	.....	.....
Ashmore, F. M., Easton, Ill	.....	.....	.....
Augenstein, A. A., R. 1, Dakota, Ill	52	50	1,900
Bachelder, N. C., Harristown, Ill	3	100	.....
Balluff, Henry, Beardstown, Ill	.....	.....	.....
Baldwin, H. I., 201, Indiana Ave., Danville, Ill	.....	.....	.....
Bale, Harris L., Petersburg, Ill	.....	.....	.....
Barton, W. H., Bluford, Ill	.....	.....	.....
Bartsch, F. R., 330 W. 69th St., Chicago, Ill	6	100	80
Baxter, Dr. A. C., 1418 Holmes Ave., Springfield, Ill	66	210	1,450
Baxter, Emil J., Nauvoo, Ill	160	.....	1,650
Bean, G. W., Exeter, Ill	.....	.....	.....
Beaver, Wallace R., Lincoln, Ill	.....	.....	.....
Becker, Charles, Pleasant Plains, Ill	.....	.....	.....
Bellatti, Fred F., Mt. Pulaski, Ill	25	700	.....
Bender, C. F., Newman, Ill	94	1,620	.....
Bennett, C. S., 1022 Jackson St., Charleston, Ill	20	.....	.....
Benson, August, R. 2, Prophetstown, Ill	22	20	400
Berg, Bernhard, 1029 Seminary St., Danville, Ill	.....	.....	.....
Be ry, Eugene F., Taylorville, Ill	.....	.....	.....
Birks, Mrs. W. E., Cornland, Ill	.....	.....	.....
Bishop, Elmer, Virden, Ill	.....	.....	.....
Bishop, Frank, Virden, Ill	132	1,200	3,300
Bowen, J. W., Lincoln and Mounds Aves., Jacksonville, Ill	.....	.....	.....
Bowen, Walter, R. 4, Box 20, Casey, Ill	.....	.....	.....
Break, Chas. R. 2, Box 59 Ramsey, Ill	.....	.....	.....
Brelsfoard, W. H., Kenney, Ill	32	400	.....
Brebeck, John, 748 E. Punor, Hoopeston, Ill	.....	.....	.....
Brigham, Wm. B., 1108 E. Oakland Ave. Bloomington, Ill	.....	.....	.....
Breck, J. L., Bethany, Ill	.....	.....	.....
Brown, Mrs. Fred S., Div rnon, Ill	.....	.....	.....

	No. of Colonies, 1917.	Pounds Comb Honey.	Pounds Extracted Honey.
Bryant, E. J., 676 Walnut Ave., Elgin, Ill	19	.....	.....
Buckingham, E. F., Virden, Ill	.....	.....	.....
Bunch, J. P., Naples, Ill	85	.....	3,000
Burrows, Charles, 810 N. McLean St., Lincoln, Ill	7	.....	200
Burtle, James R., Glenarm, Ill	.....	.....	.....
Campbell, James S., Florence, Ill	93	2,200	300
Campbell, John F. Co., 326 W. Madison St., Chicago, Ill	.....	.....	.....
Carlson, P. A., 503 S. 4th St., Galva, Ill	22	200	1,100
Carney, J. H., Steward, Ill	.....	.....	.....
Carrice, John G., Barnett, Ill	.....	.....	.....
Chapman, J. R., Raymond, Ill	4	120	.....
Chapman, M., Valley, Ill	.....	.....	.....
Claussen, S. S., R. 3, Oregon, Ill	.....	.....	.....
Clawson, Fred D., Box 228, Momence, Ill	50	800	400
Claypool, George, Marshall, Ill	25	1,500	100
Coffey, Mrs. James, Middletown, Ill	.....	.....	.....
Coogan, William M., Lincoln, Ill	.....	.....	.....
Cookingham, J. F., 609 Plum St., Danville, Ill	.....	.....	.....
Cooksey, D. S., Macon, Ill	40	.....	1,800
Cooper, W. W., Burton View, Ill	.....	.....	.....
Coppin, Aaron, Wenona, Ill	.....	.....	.....
Croney, H. Dean, Pleasant Plains, Ill	.....	.....	.....
Crum, Fred, Palmyra, Ill	55	800	800
Cunningham, J. C., Streator, Ill	58	.....	.....
Davis, Chas. W., Curran, Ill	7	200	.....
Deem, B. L., Colona, Ill	.....	.....	.....
DeJarnette, F. J., Beason, Ill	13	400	.....
Desert, Frank, 1308 Ottawa St., Lincoln, Ill	.....	.....	.....
Denyer, Geo. F., Durand, Ill	120	.....	3,500
Downey, Jas. C., Jerseyville, Ill	.....	.....	.....
Easterday, E. S., Nokomis, Ill	.....	.....	.....
Ebens, John, R. 3, Oregon, Ill	.....	.....	.....
Echternack, Mrs. Henry, Marengo, Ill	.....	.....	.....
Eisenbise, Ira B., Lanark, Ill	14	500	.....
Erbaugh, P. W., (Entomology) Washington, D. C	.....	.....	.....
Etienne, Alphonse, R. 28, Ottawa, Ill	3	.....	180
Ewing, Clifford B., Neoga, Ill	6	328	.....
Farmer, Trueman, Rohrer, Ill	6	500	.....
Finger, C. A., Marissa, Ill	22	300	900
Felkman, Geo., San Jose, Ill	.....	.....	.....
Fosse, E. P., Marion, Ill	.....	.....	.....
Foss, John F., Walnut, Ill	77	1,100	.....
Frei, George J., R. 5, Freeport, Ill	.....	.....	.....
Fry, Jacob, R. 61, Mechanicsburg, Ill	.....	.....	.....
Garfield, H. F., Murrayville, Ill	.....	.....	.....
Gasaway, S. M., Mt. Pulaski, Ill	.....	.....	.....
Gibbs, J. M., Palmyra, Ill	.....	.....	.....
Good, J. E., Ashland, Ill	.....	.....	.....
Goodwine, Frank S., Hoopeston, Ill	.....	.....	.....
Gleason, M. K., R. 31, Columbus, Ind	.....	.....	.....
Gray, W. H., Chillicothe, Ill	150	.....	5,000
Greer, J. R., Shumway, Ill	.....	.....	.....
Greer, M. W., Rushville, Ill	23	500	.....
Grieves, Blake B., Lacon, Ill	325	.....	.....
Gusswein, John, 549 Williams Boulevard, Springfield, Ill	.....	.....	.....

	No. of Colonies 1917.	Pounds Comb Honey.	Pounds Extracted Honey.
Hall, C. A., Niantic, Ill	.....	.....	.....
Hallock, W. H., 309 W. Walnut St., Fairbury, Ill	.....	.....	.....
Halloran, T. F. Reddick, Ill	7	500	.....
Harbarger, H. E., Boody, Ill	.....	.....	.....
Harris, J. B., Alhambra, Ill	19	1,000	.....
Heinzel, A. O., R. 3, Lincoln, Ill	.....	.....	.....
Heinzel, Herman, Lincoln, Ill	7	.....	.....
Henderson, Perry, Literberry, Ill	.....	.....	.....
Heslop, Edward, R. 8, Springfield, Ill	.....	.....	.....
Hettel, Mrs. J., Marine, Ill	.....	.....	.....
Hintz, Jugust J., Lemont, Ill	.....	.....	.....
Hoes, T. Scott, Butler, Ill	20	550	.....
Hefmeister, Chas. 410 State St., Belleville, Ill	.....	.....	.....
Hellard, Fred E., Highland, Ill	10	400	100
Hollowell, J. J., Farmer City, Ill	100	300	1,400
Herack, Charles, Streator, Ill	12	.....	500
Hubert, Wm., Jr., R. 6, Jefferson Heights, Belleville, Ill	24	.....	1,000
Huson, Ton, Hettick, Ill	.....	.....	.....
Hussible, H. C., Highland, Ill	.....	.....	.....
Jackson, E. C., 821 Feldkamp, Springfield, Ill	.....	.....	.....
Jeffries, A. E., R. 5, Springfield, Ill	6	.....	300
Johnson, M. D., Webster, Iowa	60	1,000	.....
Kellogg, W. M., New Boston, Ill	.....	.....	.....
Kendrick, Ellis, New Canton, Ill	.....	.....	.....
Kieffer, Ed. J., 4940 N. Monticello Ave., Chicago, Ill	25	.....	800
Kildow, A. L., Putnam, Ill	.....	.....	.....
Kile, Henry, 630 N. Church St., Rockford, Ill	50	.....	2,500
King, Harry L., R. 5, Springfield, Ill	.....	.....	.....
Klein, J. J., Macon, Ill	.....	.....	.....
Kluck, N. A., R. 4, Lena, Ill	30	.....	3,000
Knidson, Harold, Farmingdale, Ill	.....	.....	.....
Koeller, W. H., New Canton, Ill	.....	.....	.....
Koontz, John, Stewardson, Ill	.....	.....	.....
Kruse, Chas. L., Paris, Ill	.....	.....	.....
Kuschnensky, Henry, Lincoln, Ill	.....	.....	.....
Laube, August, Atlanta, Ill	.....	.....	.....
Laurie, T. E., Jacksonville, Ill	.....	.....	.....
Lee, H. W., Pecatonica, Ill	175	600	500
Legat, Sylvester, Spring Valley, I l	.....	.....	.....
Levi, James, R. 4, Lincoln, Ill	.....	.....	.....
Lind, M. H., Bader, Ill	110	200	400
Lloyd, Geo. B., 110½ N. Glenwood Av., Springfield, Ill	.....	.....	.....
Lobdell, E. L., Rockton, Ill	45	500	1,000
Love, Samuel H., Milan, Ill	.....	.....	.....
Mandle, H. W., Palmyra, Ill	70	250	2,500
Markuski, Jake, Lincoln, Ill	.....	.....	.....
Marriott, Mrs. Maryettie, Reoedale Ad., Pekin, Ill	14	200	.....
Martin, M. M., Caledonia, Ill	.....	.....	.....
Maurer, Geo. F., R. 2, Browns, Ill	.....	.....	.....
Meek, A., 1410 E. Brown, Springfield, Ill	.....	.....	.....
Metcalf, J. F., Rockridge, Ill	.....	.....	.....
Meyers, Oliver G., Forreston, Ill	.....	.....	.....
Molohon, John W., R. 51, Pawnee, Ill	13	600	.....
Moore, Mrs. G. E., 1929 N. Morgan St. Decatur, Ill	.....	.....	.....
Moore, Will J., 1105 N. Main St., Jacksonville, Ill	.....	.....	.....

	No. of Colonies, 1917.	Pounds Comb Honey.	Pounds Extracted Honey.
Morgan, Moses C., Blue Mound, Ill	.....	.....	.....
Munroe, Brown, Peru, Ill	.....	.....	.....
McConnell, Par, R. 1, Lexington, Mo	.....	.....	.....
Ness, L. L., Morris, Ill	235	.....	9,000
Newburn, J. W., Wenona, Ill	.....	.....	.....
Norberg, Arthur J., Spring Valley, Ill	.....	.....	.....
North, Omer, El Paso, Ill	40	400	.....
North, W. L., R. 1, Winchester, Ill	7	70	.....
O'Neill, Martin, Princeton, Ill	12	200	.....
Ostermeier, John, Mechanicsburg, Ill	.....	.....	.....
Pellett, Frank C., Atlantic, Iowa (honorary member)	.....	.....	.....
Peterson, Geo. B., Minooka, Ill	.....	.....	.....
Pierson, Charles, Putnam, Ill	.....	.....	.....
Ping, E. G., Mason City, Ill	.....	.....	.....
Peindexter, James, R. 5, Bloomington, Ill	.....	.....	.....
Price, Henry, Elizabeth, Ill	57	200	2,000
Price, S. D., Waggoner, Ill	12	400	.....
Rasmussen, Peter, Fairdale, Ill	51	.....	.....
Ressinger, Frank, Mason City, Ill	95	2,600	.....
Reynolds, Alvah, Altona, Ill. (life member, 88 yrs. aet.)	.....	.....	.....
Robbins, Daniel E., Payson, Ill	40	.....	1,500
Redems, J. J., 821 S. 9th St., Springfield, Ill	.....	.....	.....
Rodenberg, H. J., Metropolis, Ill	.....	.....	.....
Roos, C. J., Mt. Pulaski, Ill	.....	.....	.....
Sauer, Geo. L., Polo, Ill	52	.....	1,000
Schleicher, Henry, R. 3, Belleville, Ill	.....	.....	.....
Schoonover, H. V., Bishop, Ill	10	30	220
Schmertman, Lewis, 250 Oak St., Freeport, Ill	37	.....	1,625
Scroggin, A. C., R. 3, Mt. Pulaski, Ill	.....	.....	.....
Seals, Glen, Loraine, Ill	.....	.....	.....
Seastream, George, Box 142, Pawnee, Ill	.....	.....	.....
Seibold, Jacob, Homer, Ill	30	100	.....
Shaw, F. L., Hutsonville, Ill	.....	.....	.....
Shearer, Hallock, R. 1, Mt. Carmel, Ill	.....	.....	.....
Shirka, Simon, 762 E. Main St., Belleville, Ill	.....	.....	.....
Sheaff, D. L., Shelbyville, Ill	.....	.....	.....
Showalter, A. E., Easton, Ill	.....	.....	.....
Sieb, Albert, 209 E. Clinton St., Lincoln, Ill	9	.....	100
Simpson, Harry C., 1011 McLean St., Lincoln, Ill	3	.....	20
Slone, Clyde, Carrollton, Ill	.....	.....	.....
Smalley, Freeman, Hartsburg, Ill	.....	.....	.....
Smith, W. H., 102 N. State St., Danville, Ill	.....	.....	.....
Snell, F. A., Milledgeville, Ill	40	.....	700
Spill, Mrs. A. D., Oakford, Ill	15	360	.....
Spriggs, J. L., care Wabash Depot, Decatur, Ill	.....	.....	.....
Stanley, F. B., care Sangamo Electric Co., Springfield, Ill	.....	.....	.....
Steinhauser, Jno. S., R. D. Box 37, Downer's Grove, Ill	28	.....	500
Stone, Jas. A., R. 4, Springfield, Ill	40	.....	1,275
Stone, T. E., McLean, Ill	.....	.....	.....
Stover, James, 1215 N. 10th St., Springfield, Ill	7	300	.....
Strickler, B. H., Loraine, Ill	.....	.....	.....
Stumm, W. H., R. 3, Edinburg, Ill	37	900	500
Sturm, G. J., Macomb, Ill	4	100	30
Stutt, Alfred, Lincoln, Ill	.....	.....	.....
Supinger, W. W., Burton View, Ill	.....	.....	.....

	No. of Colonies, 1917.	Pounds Comb Honey.	Pounds Extracted Honey.
Taylor, J. H., Virginia, Ill	.....	.....	.....
Taylor, John L., Farmindale, Ill	.....	.....	.....
Troutner, Fred, Pittsfield, Ill	29	600	1,700
Troxell, G. W., R. 2, Lovington, Ill	.....	.....	.....
Turner, W. P., Peoria Heights, Ill	40	150	50
Tyler, S. A., Hartsburg, Ill	65	500	200
Valerins, Chas., Elkville, Ill	.....	.....	.....
Van Butsele, Louis, R. 1, Collinsville, Ill	.....	.....	.....
Van De Wiel, Anton, East Dubuque, Ill	.....	.....	.....
Vaughn, M. M., Latham, Ill	3	90	.....
Vaupel, John, R. 4, Pekin, Ill	.....	.....	.....
Vogel, Henry, Galena, Ill	98	4,000	50
Waeltz, Louis, Marissa, Ill	40	290	960
Wagner, F. C., R. 4, Decatur, Ill	.....	.....	.....
Warber, Rev. C., Alhambra, Ill	5	509	.....
Welsh, Frank, Petersburg, Ill	2	300	.....
Werner, Louis, Edwardsville, Ill	30	400	150
Wheeler, Harry, J., R. 8, Springfield, Ill	.....	.....	.....
Whitford, D. W., Clayton, Ill	.....	.....	.....
Whitmore, H., Box 55, Momence, Ill	24	125	300
Wiley, C. H., Harrisburg, Ill	21	48	2,600
Williams, W. H., Pekin, Ill	.....	.....	.....
Withrow, G. M., Mechanicsburg, Ill	.....	.....	.....
Wittlich, Philiph, 1218 N. Main St., Belleville, Ill	.....	.....	.....
Wolfe, Austin D., Parkville, Mo	.....	.....	.....
Woolsey, Thos. C., R. 8, Springfield, Ill	.....	.....	.....

Honorary Life Members:

Dr. C. C. Miller, Marengo, Ill.
Dr. E. F. Phillips, Washington, D. C.
C. P. Dadant—Editor American Bee Journal—Hamilton, Ill.
E. D. Townsend—Editor Dom. Bee-Keeper—Northstar, Mich.
E. R. Root—Editor Gleanings—Medina, Ohio.

Following are the names sent in by Secretary Bull, of the Chicago Northwestern, and by Secretary Isenburg, of the Illinois River Valley Bee-Keepers' Association, but not receipted for, as no fees have been received up to the time of going to press, April 1, consequently the names do not appear in the alphabetical list of paid members, neither are they entitled to the cloth bound copies of the report until the fees are paid to the secretary of the State Association.

Members of the Chicago Northwestern:

Miss Addie Sly, Bermingham, Mich.
David Running, Filion, Mich.
Gustave Gust, Kaukauna, Wis.
W. H. Mays, Goshen, Ind.
J. F. Coyle, Penfield, Ill.
C. A. Rifenbergh, Waupun, Wis.
A. I. Root Co., 215 W. Ohio St., Chicago, Ill.
A. A. Moe, Woodford, Wis.
J. C. Wheeler, 622 S. Austin Blvd., Oak Park, Ill.
A. E. Sherman, Seymour, Wis.
Joe Fussner, Brimfield, Ill.
Nuel L. Dunn, Kent City, Mich.
Gottleib Russen, 3029 N. Leavitt St., Chicago, Ill.

Members of the Chicago-Northwestern—Concluded.
C. F. Kannenberg, 1114 Augusta St., Oak Park, Ill.
Arthur Flood, 3346 S. 52d Ave., Cicero, Ill.
W. C. Lyman, R. 1, Downer's Grove, Ill.
C. O. Smith, 5446 Cornell Ave., Chicago, Ill.
E. C. Pike, St. Charles, Ill.
M. M. Baldridge, St. Charles, Ill.
W. B. Blume, 6505 Norwood Park Ave., Norwood Park, Ill.
Jas. S. Hins, O. S. University, Columbus, Ohio.
Chas. B. Saunders, Barrington, Ill.
W. N. N. Stewart, Emerson, Ill.
Erik Bjorkman, Dawson, Minn.
F. C. Farrington, Wheaton, Ill.
A. A. Linn, Stoughton, Wis.
F. N. Robinson, Legrand, Mich.
Peter Rasmussen, Fairdale, Ill.
H. C. Kenning, Catawba, Wis.
A. J. Diebold, Seneca, Ill.
Frank Walker, 206 Prospect St., Bellevue, Ky.
L. J. Corbeille, Jr., North Freedom, Wis.
B. F. Oakes, Maywood, Ill.
William Marshall, Carpentersville, Ill.
Charles Hansel, Minooka, Ill.
Howard Fisher, 1313 N. State St., Chicago, Ill.
F. R. Simmons, Harvey, Ill.
J. Frank Haan, River View, Ill.
Edward Hassinger, Jr., Greenville, Wis.
J. A. MacNeill, 11339 S. Irving Ave., Chicago, Ill.
F. W. Sievert, Porter, Ind.
H. C. Roher, Hinsdale, Ill.
E. S. Miller, 508 College Ave., Valparaiso, Ind.
J. C. Bull, 1013 Calumet Ave., Valparaiso, Ind
Henry F. Fisher, Bensenville, Ill.
R. A. Burnett, 173 S. Water St., Chicago, Ill.
L. H. Snider, Auburn, Ind.
A. Coppin Wenona, Ill.
C. W. Finch, 1451 Ogden Ave., Chicago, Ill.
B. D. Barkemeyer, 420 Marion St., Oak Park, Ill.
C. P. Dadant, Hamilton, Ill.
F. E. Matgke, Juda, Wis.
Martin Wachter, R. 3, Hinsdale, Ill.
John O'Brien, R. 2, Newark, Ill.
Herman Teuomacher, Dyer, Ind.
John Klein, R. No. 39, Mendota, Ill.
E. J. Bryant, 676 Walnut Ave., Elgin, Ill.

Members of the Illinois Valley Association:
Albert I. Brenneman, Hopedale, Ill.
Russell Tucker, R. 3, Pekin, Ill.
Peter Schrook, 418 S. 7th St., Pekin, Ill.
Frank Hirth, 315 S. 2nd St., Pekin Ill.
George Schwinn, 917 Caroline St., Pekin, Ill.
John Oltman, 1309 Willow St., Pekin, Ill.
H. P. Rust, 333 Chestnut St., Pekin, Ill.
Henry J. Becker, R. F. D., East Bluff, Pekin, Ill
Fred A. Heyl R. F. D., Forest City, Ill.
A. D. Barton, Mackinaw, Ill.
G. A. Field, Mackinaw, Ill.
S. A. Tyler, R. 1, Hartsburg, Ill.
George Bookwitz, San Jose, Ill.
Ike Reed, San Jose, Ill.
Lawrence Wagner, R. 1, Box 73, Peoria, Ill.
R. H. Meyers, 609 Lavielle St., Peoria, Ill.

Members of the Illinois Valley Association—Concluded.

L. A. Hanchette, Peoria, Ill.
B. F. Bell, Minier, Ill.
J. D. Dickinson, Toulon, Ill
J. Stanley, South Bartonville, Ill.
Frank Woodley, Jr., R. 2, Manito, Ill
F. R. Isenburg, 495 S. 7th St., Pekin, Ill.

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